LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN
FINANCE

MASTERS FINAL WORK
PROJECT

EQUITY RESEARCH:
PFIZER INC.

ANTÓNIO PEDRO DA SILVEIRA E LORENA PINTO CHARRUA

OCTOBER 2017

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SUPERVISOR:

PROF. DOUTORA CLARA PATRÍCIA COSTA RAPOSO

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Abstract

This project contains a detailed valuation of Pfizer Inc. This Equity Research is a continuation of the implementation process of a new presentation format for this kind of projects, combining the style and rules of ISEG Master Final Project and the CFA institute (Pinto, Henry, Robison, and Stowe, 2010) recommendations.

The choice of Pfizer Inc. comes from my personal interest in the pharmaceutical industry in general, and particularly in the capacity of companies in this industry to create value and even with very high costs continue to perform extremely well through the years.

The price target from this valuation was computed using the most adequate method for the purpose, the Discounted Cash Flow (DCF) approach, which was complemented with Relative Valuation Method approach in order to support the final recommendation.

Considering the price target obtained was $37.35 representing an upside potential of 15% when compared with the price of $32.48 in the end of 2016, the final recommendation is to Buy, despite the risks that may occur in the future that can affect the price target. The risk assessment estimated for Pfizer Inc. is considered to be medium.

Resumo

Este projecto contém informaçao detalhada da Pfizer Inc. Este Relatório de Avaliação é uma continuação do processo de implementação de um novo formato de apresentação para este tipo de projecto, agregando as regras de estilo do Trabalho Final do Programa de Mestrado do ISEG e as recomendações do CFA Institute (Pinto, Henry, Robison, and Stowe, 2010).

A escolha da Pfizer Inc. vem do meu interesse pessoal na industria farmacêutica em geral, e em particular pela capacidade das empresas desta industria em criar valor e mesmo com custos muito altos, continuar a apresentar excelentes indicadores durante todos estes anos.

O preço alvo desta avaliação foi calculado usando o método mais adequado para o efeito, o método dos Fluxos de Caixa Descontados (DCF), que foi complementado com o método dos Múltiplos Comparáveis para sustentar a recomendação final.

Considerando que o preço alvo obtido foi de $37.35, representado um pontencial de valorização de 15% quando comparado ao preço da ação no final de 2016, a recomendação final é de Compra, apesar dos riscos existentes que podem after o preço alvo. O risco estimado para a empresa é considerado um risco médio.

Acknowledgements

This project was a long and hard journey but very rewarding at the same time. Writing this thesis would never be possible without the unconditional support of my family, friends and mentors.

To my dad, my mother and my sister, thank you for the unconditional support, encouragement and valuable insights through all my life path, that made me achieve all my personal and professional goals.

To my friends, thanks for the friendship and good moments we spent together on this journey and thanks for the push, making sure I make it through this final work.

To my girlfriend, thanks for always having my back, for the support and patience during these months, for the friendship and for being part of this journey.

To Professor Clara, thank you for the support, time patience and friendship during this process, I can truly say you contributed a lot to shape me as a professional, with your guidance and advices. It’s been an honor to learn from the finest professors from ISEG.

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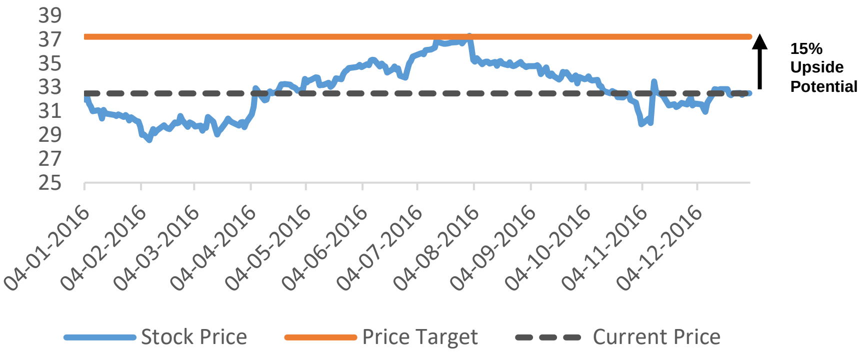
1. Research Snapshot

Price Target of **$37.35**, **15%** Upside Potential, Medium risk; Final Recommendation: **Buy**).

Stock Value

Source: Bloomberg



Our **final recommendation** for Pfizer Inc. stands for **Buy**, with a price target **of $37.35** and an upside potential of 15%, comparing to the last closing price of 2016.

The price target was computed using **Discounted Cash Flow** approach as the principal model. We also used **Relative Valuation** model to support DCF valuation in which we reach a price target of $37.66 and an upside potential of 16%. With this price target derived from both valuation models it is possible to conclude that Pfizer Inc. is currently **undervalued**.

Regarding risk assessment, we considered that PFE has a **Medium Risk of Investment** due to the current business challenges the company is facing nowadays.

The Innovative Health segment is the main driver of company sales, and it is expected that it will still account for the major part of revenues in the future. Pfizer Inc. EBIT is forecasted to grow in the next five years due to an expected global rise in terms of revenues around 6% for companies on this industry, and Pfizer Inc. will still be a big player in this industry consequently influenced by this trend.

From our forecast values, it is expected that Pfizer Inc. profitability will increase in the next five years, being possible to say that those years will mark financial recovery. It is also expected that the company will still perform very expressive values in terms of investments, to increase probability of a potential blockbuster in the pipeline of products.

Table 4: Financial Highlights

Source: AC analysis, Millions of US Dollars.

	2016	*2017F*	*2018F*	*2019F*	*2020F*	*2021F*	*Perp.*
Revenues	52,824	56,152	59,689	63,450	67,447	71,696	74,349
COGS	12,329	11,679	12,415	13,197	14,028	14,912	15,464
Op. Expenses	28,489	30,689	32,623	34.678	36,863	39,185	40,635
EBIT	**12,006**	**13,784**	**14,652**	**15,575**	**16,556**	**17,599**	**18,251**

Pfizer Inc.
Buy
Medium Risk
October 2017
United States

Table 1: Risk Assessment

Source: AC analysis

LOW	MEDIUM	HIGH

Table 2: Market Profile

Source: AC analysis

Moody's Rating	**A1**
Last Price	$32.48
Price Target	$37.35
Ticker	PFE
Industry	Pharmaceutical

Table 3: Valuation Output

Source: AC analysis

Valuation	**Output**
DCF	$37.35
Multiples	$37.66

Figure 1: Investment Grade

Source: BPI risk matrix

	LOW RISK	**MEDIUM RISK**	**HIGH RISK**
BUY	>15%	>20%	>30%
HOLD	>5% and <15%	>10% and <20%	>15% and <30%
REDUCE	>-10% and <5%	>-10% and <10%	>-10% and <30%
SELL	<-10%	<-10%	<-10%

2. Business Description

PFIZER INC. (PFE) is an American pharmaceutical corporation, dedicated to develop and discover medicines, vaccines and healthcare products that can provide advance wellness, prevention, treatments and cures that challenge the most feared diseases of our time. PFE is listed on NYSE since June 1942, and at the time the first big launch was achieved with a product able to treat intestinal worms in the most successful way. Thenceforward Pfizer has been applying science and bringing therapies that improved and extended human life, becoming one of the largest pharmaceutical companies in the world (Figure 2), with headquarters in New York City and with a total average number of 96,500 employees (Figure 3).

The firm currently manages its commercial operations through two different business segments: Pfizer Innovative Health (IH) and Pfizer Essential Health (EH). From the beginning of 2014 fiscal year until the second quarter of 2016, these operations were managed by different business segments, but from now on the firm will manage its operations assigning to each segment (IH and EH) the responsibility for their own commercial activities and for certain R&D projects.

The **Pfizer Innovative Health (IH)** segment is focused on developing and commercializing new, value-creating medicines and vaccines that significantly improve patients' lives, as well as products for consumer healthcare. In this segment the key therapeutic areas include internal medicine, vaccines, oncology, inflammation & immunology, rare diseases and consumer healthcare.

The **Pfizer Essential Health (EH)** segment contain legacy brands that already lost or will soon lose exclusivity in developed and emerging markets, generic sterile injectable products, branded generics, infusion systems and biosimilars. This segment also includes R&D organization, as well as contract manufacturing business.

The majority of PFE revenues come from the manufacture and sale of biopharmaceutical products. Regarding this, it is important to consider that this industry is highly competitive and regulated, resulting in a considerable number of factors and challenges that can have a strong impact in the company's results. The main challenges and factors comprise among others: healthcare legislation, the regulatory environment, pipeline productivity, the loss or expiration of intellectual property and rights, pricing and access pressures and competition and the expiration of co-promotion and licensing rights, as well as the results of the global economic environment. Despite the challenges the industry faces, Pfizer Inc. has been recording reasonable values in terms of sales through the years, and that can be expressed by the $52.8 Billion recorded in 2016 that represents an approximate 8% growth compared to the previous year. In 2016, international revenues represented 50% of total revenue (Figure 4). Also in 2016, 55% of total revenue was derived from Pfizer Innovative Health (IH), and 45% of the total revenue came from Pfizer Essential Health (EH) as can be observed in Figure 5.

Since Pfizer Inc. develops its operations in such a competitive industry sector like the pharmaceutical one, the company makes a massive effort fighting the patent protection, that once it expires, exposes the specific product from the company pipeline that it is intended to protect, and allows competitors to create a biosimilar product which plays basically the same role has the one the company created previously. In such a situation, generic competition starts and the price of the impacted products drops, having a significant adverse effect on PFE revenues. This a normal reality for the company that seeks for constant innovation and strives for new potential blockbuster products that can offset future losses occurred due to the patent expiration and generic competition.

Figure 2: Pfizer Inc. offices
Source: Company data

Notes: Pfizer has office's spread worldwide.

Figure 3: PFE average number of employees
Source: Thomson Reuters.

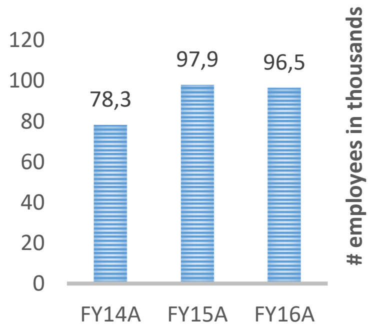


Figure 4: Revenues by geographic area
Source: Pfizer Inc. financial data, Millions of US Dollars

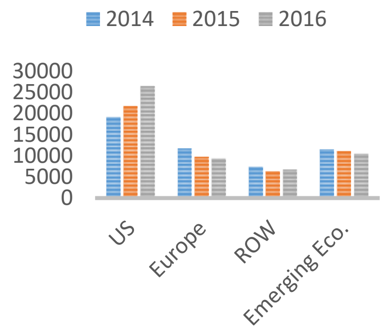
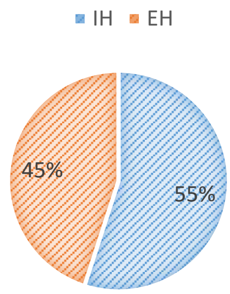


Figure 5: Revenues by segment
Source: Pfizer Inc. financial data



Company strategy:

Pfizer Inc. believes that the medicines developed by its teams create significant value for patients and healthcare providers, improving treatment of diseases and reducing emergency and hospitalization costs. The company is in constant effort looking for the best way to work with patients, physicians and payers to prevent and treat diseases and improve outcomes. In order to maximize patient access and minimize any adverse impact on revenues, the company is still working within the current legal and pricing structures, reviewing pricing agreements and contracting methods with payers and insurance companies, remaining strictly devoted to the main purpose of innovating and bringing therapies to patients that could extend and significantly improve their lives.

Commercial Operations: Pfizer Inc. now manages commercial operations through two different segments, Pfizer Innovative Health and Pfizer Essential Health that were reorganized officially in the second quarter of 2016. Each segment is composed by different products with different features and life stages, forming the firm's portfolio (Table 5 and Table 6).

The company expects that the Pfizer Innovative Health (IH) portfolio of innovative, largely patent-protected, in-line and newly launched products will be sustained by constant ongoing investments allowing to develop promising assets and targeted business development in areas of focus ensuring a pipeline of very differentiated products in the most challenging areas of medical need. The products leaded by Pfizer Innovative Health are science-driven, highly-differentiated and require a huge engagement with healthcare providers and consumers, while the other segment Pfizer Essential Health (EH), aims to generate strong and consistent cash flow, giving access to effective, lower-cost, high-value treatments to patients all around the world. It is also expected that Pfizer Essential Health (EH) leverages biologic development, regulatory and manufacturing expertise to seek and to advance its biosimilar development portfolio, and also that leverages capabilities in formulation, development and manufacturing expertise to help advancing its generic sterile injectable portfolio.

Research and Development Operations: The Company is still looking to reinforce their global R&D organization and is chasing strategies intended to improve innovation and overall productivity in R&D, in order to achieve a sustainable pipeline that will deliver value in the short and long run. The firm's primarily research focus is on the areas represent in Figure 6, and these R&D priorities include delivering a pipeline of highly-differentiated therapies and vaccines with the greatest medical and commercial commitment, innovating new capabilities that can lead PFE to a strong leadership in the long run, and create new models for biomedical collaboration that will speed up the pace of innovation and productivity. Besides the significant internal portion of R&D, the firm also seeks for promising chemical and biological lead molecules and innovative technologies developed by third parties, to incorporate in internal processes, projects and product lines through collaborations, license agreements and alliances with other companies, as well as leveraging acquisitions and debt or equity in based investments, allowing the company to share risk and cost and access external scientific and technology expertise, extremely required to advance their own products as well as in-licensed or acquired products.

Intellectual Property Rights: As part of the strategy, Pfizer Inc. prospects to continue defending aggressively their patent rights whenever appropriate, and will keep supporting efforts that impulse worldwide recognition of patent rights. The firm will also exert innovative approaches designed to avoid counterfeit pharmaceuticals from entering the supply chain and to have better mastery over the distribution of their own products, including the generic market whenever their products lose exclusivity.

Table 5: Leading product by segment

Source: company data

IH	Prevnar 13
	Xeljanz
	Eliquis
	Lyrica-US, Japan and other markets
	Enbrel-Outside US and Canada
	Viagra
	Ibrance
	Xtandi
	Several OTC consumer products

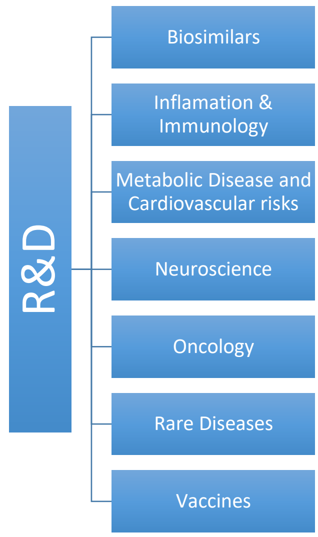
Table 6: Leading product by segment

Source: company data

EH	Lipitor
	Premarin familiy
	Norvasc
	Lyrica-EU,Russia, Israel,Central Asia
	Celebrex
	Pristiq
	Several sterile injectable products

Figure 6: R&D principal areas

Source: company data



Negotiation and litigation is part of the strategy in order to pursue valid business opportunities, challenging intellectual property rights held by other firms.

Capital Allocation and Expense Management: Part of the strategy of Pfizer Inc. is to maintain a strong balance sheet and robust liquidity for the purpose of having the financial resources required to take advantage of prudent commercial, business development and research opportunities and to directly enhance shareholders value by share repurchase and dividends method. Figure 7 represents the chart of dividend per share evolution, in which it is possible to see a clear trend of growth over time. Considering the existing significant costs related with integrating, acquiring and restructuring businesses - and in relation with PFE's global cost reduction and productivity initiatives, that can impact all business and functions including sales, marketing, manufacturing, R&D, information technology, shared services and corporate operations - Pfizer Inc. also intends to achieve an appropriate cost structure for the company; as can be seen in Table 7 the costs associated with acquisitions and cost reduction and productivity initiatives have been increasing.

Business Development Initiatives: The firm is strictly committed to advancing its pipeline of products and maximize the value of the in-line products through alliances, joint ventures, collaborations, equity or debt based investments, dispositions and mergers and acquisitions. The company will also continue to pursue a strategic, disciplined and financial approach to evaluating opportunities to develop business that could be able to generate earnings growth and enhance shareholders value. From 2014 to the end of 2016, Pfizer Inc. already had sixteen initiatives of this kind that significantly impact the company's results in that period.

Figure 7: Dividends per share

Source: company data

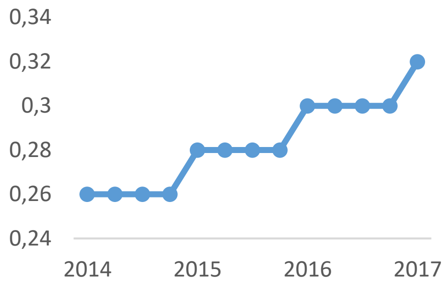


Table 7: Cost reduction initiatives

Source: company data, Thousands of US Dollars

	2014	2015	2016
RESTRUCTURING CHARGES	170	1152	1724
TRANSATION COSTS		123	127
INTEGRATION COSTS	80	219	441
ASSET RESTRUCTURING	261	122	207
IMPLEMENTATION COSTS	270	203	340
TOTAL COSTS	**781**	**1478**	**2271**

3. Management and Corporate Governance

Corporate Governance:

The company believes that the optimal Board leadership structure, is composed by an independent oversight function of entirely independent directors, providing the company with strong operational performance and strengthened necessary to achieve the company goals.

PFE's has a leadership structure (Figure 8) composed by eleven independent directors, one lead independent director, a chairman/CEO and is organized around five committees. The committee resume is represented in Table 8.

Audit Committee (1): Consisted by Suzanne Nora Johnson as chair and also by other members like Don Cornwell, Joseph Echevarria, Stephen Sanger and James Smith, being all members independent, financially literate and qualified as Audit Committee Financial Experts. This Committee has the responsibility of overseeing Pfizer's Enterprise Risk Management (ERM) program. This committee works together with the Legal Division and the Compliance Division ensuring that ERM is integrated in the strategic and operating planning process. It also reviews and receives regular briefings regarding Pfizer's information security and technology risks, including discussions of the company's information security and risk management programs.

Regulatory and Compliance Committee (2): Composed by Frances Fergusson has the chair of the committee, and other additional committee independent members, namely Don Cornwell, Shantanu Narayen, Helen Hobbs and Suzanne Nora Johnson. This committee is responsible for reviewing and overseeing Pfizer's compliance program, evaluating its effectiveness. The committee process information about current and emerging risks and regulatory trends that may affect PFE business, operations, strategy and performance. The inherent risk are related with health care law compliance programs and the status of compliance with applicable laws, internal procedures and regulations.

Compensation Committee (3): Composed by James Smith has chair, together with other independent members like Don Cornwell, James Kilts and Shantanu Narayen. This Committee is responsible for reviewing and approving the company's overall compensation philosophy and oversees the administration of PFE executive compensation and benefit programs, policies and practices.

Science and Technology Committee (4): This Committee is composed by the chair Helen Hobbs, and other additional independent members: namely, Dennis Ausiello, Ronald Blaylock, Don Cornwell, Joseph Echevarria, Frances Fergusson, James Kilts, Shatanu Narayen, Suzanne Nora Johnson, Stephen Sanger and James Smith. This committee is responsible for periodically examining management's strategic direction and investment in pharmaceutical R&D and technology activities. In addition, this committee is responsible to identify emerging issues, assess the performance of R&D leaders, and evaluate the sufficiency of the review process by external scientific experts.

Corporate Governance Committee (5): This Committee is represented by Stephen Sanger, the chair of the committee, and other independent members, namely Ronald Blaylock, Joseph Echevarria, Frances Fergusson and Helen Hobbs. The responsibility of this committee consists on overseeing the practices, policies and procedures of the Board and its committees, advising on the structure Board meeting, recommending matter of consideration by the Board, and it also reviews, advises and recommends

Figure 8: Leadership Structure

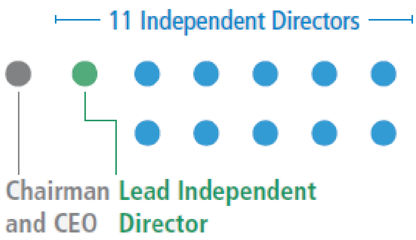
Source: proxy statement for investors 2017

Table 8: Committees resume

Source: proxy statement for investors 2017

Name	(1)	(2)	(3)	(4)	(5)
Ausiello				●	
Cornwell	●	●	●	●	
Echevarria	●			●	●
Fergusson		CHAIR		●	●
Hobbs		●		CHAIR	●
Kilts			●	●	
Narayen		●	●	●	
Johnson	CHAIR	●		●	
Read					
Sanger	●			●	CHAIR
Smtih	●		CHAIR	●	
Meetings	14	9	5	4	3

Figure 9: Director Independence



Director compensation, that is approved by the full Board. Also, the committee keeps an informed status on company issues related to public policy as well as corporate social responsibility, sustainability and philanthropy.

Lead Independent Director: The independent director of Pfizer Inc. leadership structure is Dr. Dennis Ausiello, responsible to implement the connection between the independent directors of the different committees and the CEO of the company, ensuring, following and advising all committees due to the high level of scientific expertise and deep understanding of the business required for the function. The CEO of the company is Ian Read. Table 6 summarizes all information stated above.

The company believes that the optimal Board leadership structure, is composed by an independent oversight function of entirely independent directors, providing the company with strong operational performance and strengthened necessary to achieve the company goals. Figure 9 shows the current leadership structure of Pfizer Inc.

This corporate governance structure, in which Mr. Read is the CEO and the chairman provides Pfizer Inc. a unified structure with strong consistent leadership. Having one clear leader in both roles, with deep industry expertise and company knowledge, provides decisive and effective leadership internally and externally, which is a reasonable strength for the company. Having all the independent directors providing substantial oversight on CEO's performance, allows the directors to evaluate the effectiveness of its leadership structure and act in function of the company and shareholders best interest.

Social Responsibility:

In relation to social responsibility, Pfizer Inc. believes that everyone should have access to quality healthcare and healthy lives. The company combines different methods and approaches involving the company's people, products and funding along with partnerships with governments, nonprofit organizations and foundations that can impact on public-health systems facilitating access to healthcare for under-served communities, which is a purpose the company wants to reach. The current portfolio of programs range from donating their own medicines, volunteering employee skills to providing grants and investments that support social entrepreneurs and enterprises, promoting healthcare delivery and local innovation. With their portfolio of programs, the company aims to impact and achieve the following goals: **Building Healthcare Capacity, Expanding Access to Medicines, Promoting Corporate Citizenship.**

Shareholder structure:

The Shareholder structure at 31/12/2016 had a share capital of 5,955,125,843 shares outstanding with a free float of 0.04%. Respecting the shareholder structure, on Figure 10, the majority of the shares are held by institutional investors (mainly composed by investment managers like hedge funds, insurance companies, venture capital, pension funds, private equity and other corporations) that own 71.35% of the shares, and by private investors that own 28.61% of the shares. The management team of PFE, owns less than 1% of the total shares issued by the frim. Pfizer Inc. shares are mostly held by North American investors with 85% of the shares, followed by Europe with 13% of the shares (Figure 11). Table 9 provides information on the top three investors with more than five percent participation of PFE common stock.

Figure 10: Types of shareholders

Source: Thomson Reuters

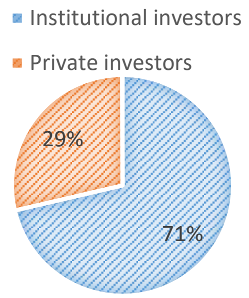


Figure 11: Share Holder Nationality

Source: Thomson Reuters

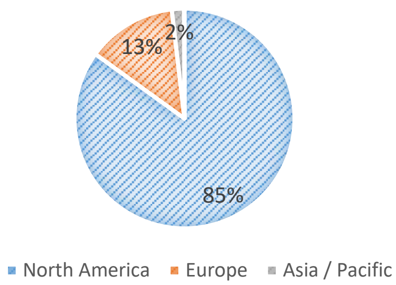


Table 9: Top Investors

Source: proxy statement for investors 2017

Name	*Shares of Pfizer common stock*	*Percent of class*
Black Rock, Inc.	447,701,806	7.40%
The Vanguard Group	402,108,792	6.62%
State Street Corporation	322,395,016	5.31%

4. Industry Overview

Global Economic Outlook:

According to IMF (Figure 12), the **global economic outlook** is **favorable.** From 2014 to 2016 there was a decrease in terms of global GDP growth (-8.83%), as a result of the political and financial crisis faced worldwide, meaning a drop of around 0.3% on global growth. For the coming years, the IMF forecasts that the world GDP is going to grow between 3.4% and 3.8%.

In what concerns **advanced economies**, it was registered also on these economies a drop on GDP (-15.8%) between 2014 and 2015, due to the impacts of negative inflation and large debts over several countries, but it is foreseen that the GDP growth rate on these countries fluctuates around 1.6% and 1.8% in the following years as Figure 13 suggests.

Emerging markets and developing economies, had a negative growth from 2014 to 2015 due to the recession some countries in Latin America faced at the time, along with a slowdown in terms of growth registered in some countries of Asia. However, it is expected by the IMF that the growth rate in the following years improves substantially, as already happened from 2015 to 2016 (Figure 13).

China Economic Outlook:

China is an important player for Pfizer Inc., due to the fact that the company is the biggest biopharmaceutical company in China, already launched 50 innovative drugs in the country until today, and has two R&D centers in China with over 10,000 employees, spread over 300 cities.

Figure 14 represents China's GDP growth, in which it is possible to see a clear trend of decrease for the coming years, and according to the IMF it is expected that the growth rate continues do decay slowly over time. Since China's GDP growth is slowing down, it is foreseen that in the near future China's economy will be attracting less investment, and higher costs of borrowing. On the other hand, the chart line in Figure 14, shows an increasing tendency for inflation over time forecasted by the IMF for the following years. In what respects to China's economic outlook, it may present **moderate risk** to PFE.

United States Economic Outlook:

United States has a very important role in Pfizer Inc. activity, considering that is the company's headquarters and around 50% of revenues came from this country. The policies created in this country and its economic performance are relevant to analyze future outcomes, since the United States is a big driver of the company's activity.

In what concerns GDP growth and inflation (Figure 15), it is possible to see a significant decrease in terms of GDP from 2015 to 2016, slowing down around 38.5% that was motivated by strong consumption and firm labor market counterbalanced by the weakness in nonresidential investment, dollar appreciation, financial turbulence earlier in the year, and big policy uncertainty related to electoral cycle that contributed to a swing on the headline growth number of GDP. However, the IMF forecast that the GDP growth will improve in the following years.

The inflation rate registered a very low value in 2015 (0.1%), but it increased quickly in the following year, since the **United States' Federal Reserve** managed to decrease interest rates in order to target an inflation rate at 2%, a level high enough to encourage a healthy level of consumer spending and also protecting from risks of deflation that could lead the economy to slowing down. The IMF forecasts that the inflation in coming years will continue to increase until 2017, and fluctuate around 2.4% over time. The United States outlook seems **favorable** for Pfizer Inc.

Figure 12: Global GDP growth

Source: International Monetary Fund, Growth in Percentage

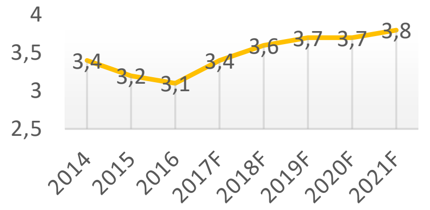


Figure 13: Advanced and Developing Economies GDP growth

Source: International Monetary Fund, Growth in Percentage

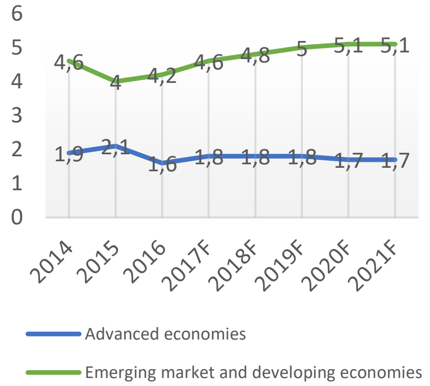


Figure 14: China GDP growth and inflation

Source: International Monetary Fund, in Percentage

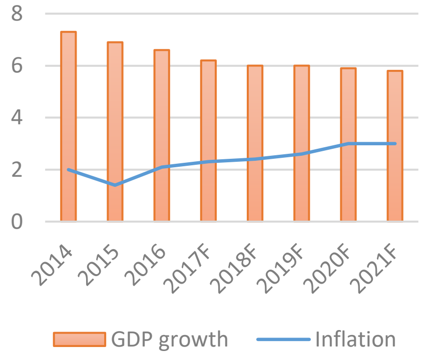
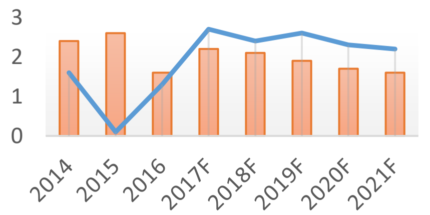


Figure 15: US GDP growth and inflation

Source: International Monetary Fund, in Percentage



Pharmaceutical Industry Overview:

The pharmaceutical industry is composed by companies engaged in researching, developing, manufacturing and distributing drugs for human and veterinary use. The new medicines discovered by those companies have a huge impact on global health, prosperity and economic productivity by saving lives, increasing life spans, preventing surgery, diminishing pain suffering, and shortening hospital patients list. Advances in medicines have eliminated deadly diseases and help controlling life-threatening conditions. The innovative medicines developed by those companies are chemically derived and are developed through extensive R&D and clinical trials. These innovating products rely on patents, regulatory data protection and other forms of intellectual property rights (IPR) to justify the investment needed to bring products to the market. In the United States the patent term is 20 years, and medicines are eligible to have at least 5 years of market exclusivity depending on the time between patent validity and U.S. Food and Drug Administration (FDA) approval. This industry is highly dependent on the development of new molecules to replace revenue stream of older drugs that are approaching the expiration of their patent terms, and the pricing of the new products is designed to cover future and past expenditures on R&D. In the United States, upon patent expiration, a manufacturer can produce a generic medicine that is basically a copy of the innovative pharmaceuticals containing the same active ingredients and are identical in what concerns to strength, dosage and form of administration.

In the United States the pharmaceutical industry represents the largest share in terms of R&D business, accounting for approximately 17% of all R&D spending in the U.S. which means this industry invests 12 times more in R&D per employee and has the highest growth rate (CAGR of 2.8%) in R&D investments across all manufacturing industries (Figure 16). The investments in this industry not only bring new medicines for patients but they also give strength to the U.S. economy, since they create high-quality and high-wage R&D and manufacturing jobs all over the country, creating around 4.5 million direct, indirect and induced jobs (Figure 17).

Figure 16: Industry R&D spending

Source: Evaluate Pharma World preview 2016, Millions of US Dollars.

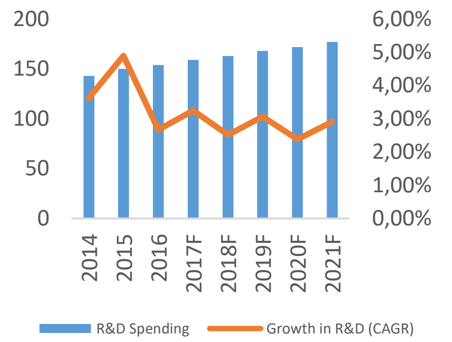


Figure 17: Industry Job Creation

Source: PhRMA 2016 industry profile

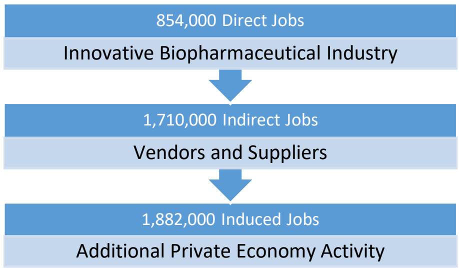


Figure 18: Worldwide sales at risk

Source: Evaluate Pharma World Preview 2016, Millions of US Dollars.

Regulatory environment:

The loss or expiration of intellectual property rights and the expiration of co-promotion and licensing rights can have a notable unfavorable effect on the industry. Each company of the industry has a portfolio of branded products with multiple patents expiring at different dates. Once patent protection has expired, companies lose exclusivity on their products, and generic pharmaceutical manufacturers are able to produce identical products and sell them afterwards for a lower price. Each company of this industry is particularly affected by this issue, with Figure 18 representing the worldwide sales at risk from patent expiration and the respective forecast for the following years.

The process of launching a product represented in Table 10 is regulated by the **U.S. Food and Drug Administration (FDA)**, having a special role in approving to test the new medicine in humans.

As part of the pharmaceutical industry, Pfizer Inc. revenues and product approval are dependent on the FDA, being the company along with all competitors reliant on the parameters imposed by the regulator, this representing a **lower risk** for the company, because of the previous knowledge of the standards FDA is ruled by.

Table 10: Pharmaceutical industry value chain

Source: AC analysis

Demand and Supply:

The **consumption** of medicines is represented in Figure 19, in which it is possible to identify a growing trend from 2014 to 2016, and a forecasted growth rate of 6.2% for the coming years until 2021. The demand for medicines is measured by its medical prescription, and is influenced by demographic and economic trends, including a rapidly aging world population and an associated rise in chronic diseases, increased urbanization and higher disposable incomes, greater government expenditures on healthcare and growing demand for more effective treatments.

The actual world population is currently growing, being nowadays 7.5 billion. As it grows, populations also becomes older and more sedentary. If previous trends are held constant many of those people will necessarily have health problems in the future. Figure 20 helps supporting the idea that currently Europe's and North America's population is getting older, which increases the use of specific drug therapies, but it also suggests that actual population structure in emerging economies like Asia, Latin America and Africa, make companies want to shift towards those economies, where pharmaceutical sales are forecasted to expand at higher rates. Further reforms of legislative systems, especially regarding patent protection and enforcement, as well as improving regulatory conditions, make these markets increasingly attractive for companies of the pharmaceutical industry, in spite of the immensity of challenges of political, cultural, social and religious order. Despite the fact there is real uncertainty across all matters lived on those emerging economies, in 2016 the global pharmaceutical industry generated around 30% of its total sales in emerging markets (Figure 21), a growing trend percentage through the last 10 years.

Another driver of consumption of medical therapies developed by the pharmaceutical industry is the increasing number of chronic diseases, which are generally an incurable illness or condition, such as heart disease, asthma, cancer and diabetes. In the United States the prevalence of chronic diseases, complications and risk factors climbed over the years and are forecasted to climb even more in the following years (Figure 22). Actually, around 47.7% of the population in the U.S., or 149 million residents, are living with one or more chronic conditions, and the number of people with chronic diseases and risk factors along with the aging factor combined, are forecasted to continue up swinging in the next years, which will drive up the total demand for medicines produced by the pharmaceutical industry. In addition, there is an increasing trend on world healthcare expending by governments, the U.S. being the world leader of expenses in percentage of GDP. In the United States the healthcare expenses are projected to grow at an average rate of 5.8% from 2015 to 2025, reaching in 2016 for the first time $10,000 per capita spending, which will definitely contribute for the seeking of new medicines and therapies and rising consumption of the new developed therapies produced by the pharmaceutical industry. The current consumption of medicines present a **favorable** outlook for Pfizer Inc.

The supply of medicines is influenced by **exchange rates** affecting companies' profitability, and sales whether they made marketing and pricing adjustments in order to control for potential losses. The dollar increase has been a reality (Table 11), the valuation of this currency has been so quick that major companies struggle to adjust. U.S. companies in the pharmaceutical industry are finding to their products becoming more expensive to foreign buyers, which might slow the sales rate and strain export negotiations, making companies face difficult decisions on pricing and market strategy. In Table 11, it is possible to see that the U.S. Dollar currency index, which indicates the general international value of the dollar computing the average of the exchange rates between U.S. Dollar and other world currencies, has been growing. The forecast made by Bloomberg Composite indicates that the currency will depreciate from 2016 to 2019, due to the monetary policies indicating an increase in Fed Funds Rate in the following years. The exchange rate represents a **moderate risk** for Pfizer Inc.

Figure 19: Worldwide total prescription of drug sales

Source: Evaluate Pharma World Preview 2016, Millions.

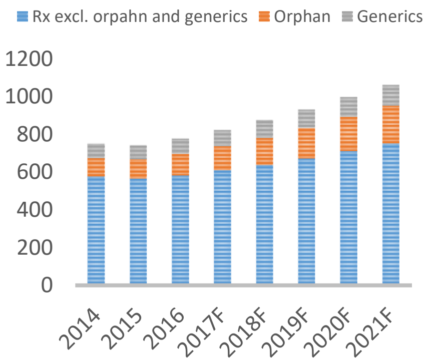


Figure 20: World population structure

Source: Statista

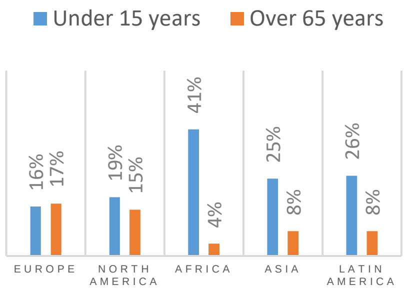


Figure 21: Pharma market sales

Source: PWC, Pharma emerging markets

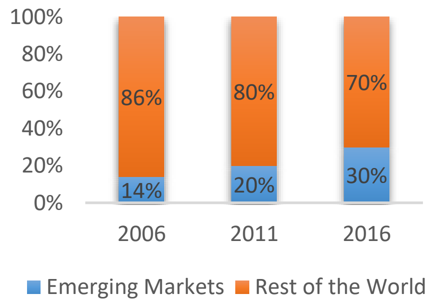


Figure 22: People with Chronic Disease

Source: Public Health: Chronic Disease Driver Forecast in U.S., Millions.

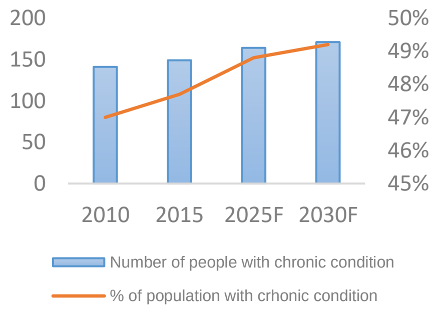


Table 11: U.S. Dollar Currency Index

Source: Bloomberg.

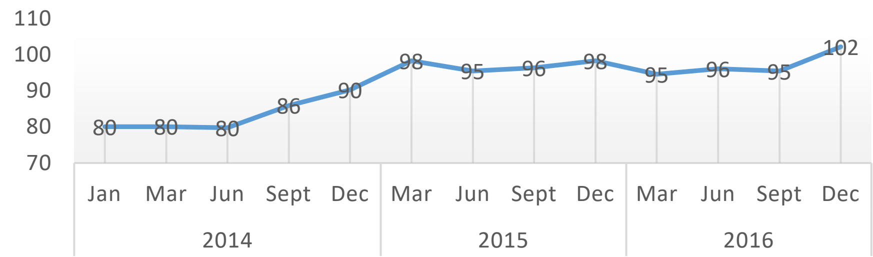
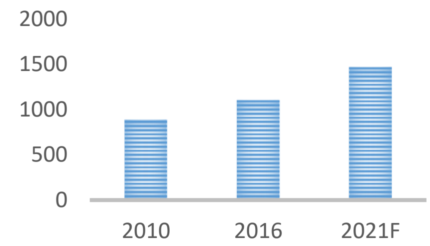


Figure 23: World spending on medicines

Source: IMS Health, Millions of US Dollars



The price of medicines has been under discussion for many years, and pharmaceutical companies know very well that a new medicine development takes an average 12 years to develop from the initial discovery stage to reach the market and consumers, and the costs of developing those drugs are enormous with a very small percentage of the prototypes reaching the market. The risk involved in developing a new successful therapy is huge. Considering the substantial amounts of spending's in R&D that makes it a resource intensive process, the challenge for this industry is to balance prices in a way that of diminishes the actual tension of those companies in keeping shareholders happy and keeping the world happy as well. Figure 23 represents the world spending on medicines in billions of U.S. dollars, which indicates a clear trend over past years on world spending in medicines and a forecast of increasing expenditures on this matter in 2021.

The mature markets of this industry have evolved economically, demographically and structurally and pharmaceutical companies continued to pursue their old business model of higher prices for new features of their medicines, even if they deliver very little extra value. But nowadays consumers seek for more value in the medicines they buy, and paying the same money or less than before. However, the dilemma is that many of those medicines in the companies' pipeline were developed before those market forces were that strong and some products may be unable to meet consumers' expectations. The price politics represent a **medium risk** for Pfizer Inc.

Debt and Financing:

Pfizer Inc. has a strong financial position considering the complex environment where it operates. The company has significant operating cash flows, access to capital markets, financial assets, and ready to use lines of credit and rotational credit agreements, that allows the firm to predict that it will maintain the ability to meet the liquidity required for a prosperous future. The long-term **debt** is rated with high quality investment grade by both S&P and Moody's (Table 12). Due to the continuously environment changing environment the company is still planning to adopt a conservative approach to financial investments made. The two major corporate debt-rating organizations, S&P and Moody's, attribute ratings to the company short term and long term debt. A security rating is not a recommendation to buy, hold or sell securities and the rating is liable to revision or withhold at any time by the rating organization. Table 12, provides the current ratings assigned by these rating agencies to the company's commercial paper and senior unsecured long-term debt. The full list of PFE bonds and maturities is represented in Table 13.

In terms of **financing,** the net cash used by Pfizer Inc. in financial activities was $8.9 billion in 2016, which decreased when comparing with the $10.4 billion in 2015. This decrease in net cash observed in 2016 occurred because of the issuance of long-term debt in $11 billion and purchases of common stock of $5 billion, partially offset by net payments on short-term borrowings of $714 million, higher payments on long term debt

Table 12: Pfizer Inc. Rating

Source: Company data

Agency	**Pfizer Commercial Paper**	**Pfizer Long-term debt**	**Outlook**
Moody's	P-1	A1	Stable
S&P	A-1+	AA	Stable

Table 13: PFE senior unsecured long-term debt

Source: Company data

(Millions of dollars)	Maturity	Principal
4.55%	May 2017	-
1.1%	May 2017	-
1.2%	June 2018	1250
1.5%	June 2018	1000
6.2%	March 2019	-
2.1%	May 2019	1500
1.7%	December 2019	1000
5.75%	June 2021	2108
1.95%	June 2021	1150
2.2%	December 2021	1000
3%	June 2023	1000
3.4%	May 2024	1000
2.75%	June 2026	1250
3%	December 2026	1750
4%	December 2036	1000
5.95%	April 2037	2000
6.5%	June 2038	1852
7.2%	March 2039	2500
4.4%	May 2044	1000
4.13%	December 2046	1250
Notes 3.3%	2018-2021	2464
Notes 5.99%	2023-2043	4455
Total principal		30529

of $7.7 billion, higher cash dividends paid of $7.3 billion and lower proceeds from the exercise of stock options of $1 billion. The environment surrounding Pfizer Inc. in terms of its debt and financing represents a **moderate risk** for Pfizer Inc.

The Industry is changing: Meanwhile, the innovative pharmaceutical industry is currently facing unprecedented challenges caused by slower growth of sales, expiring patents, increasing competition, shorter lifecycle of products, tighter regulations, adverse media coverage and reputational damage, and a decline in the number of new innovative medicines under development. There was a concern in the industry that even though the increasing enormous amounts expended on R&D, the industry is producing far fewer new drugs and effective therapies than it did decades ago, but in order to fight that trend the companies of the industry are doing considerable efforts to adjust to a more competitive environment, doing so by shifting manufacturing and other operations overseas, updating research pipelines, reducing employment and organizing mergers and acquisitions seeking out for new deals that could generate the revenues investors expect.

Peer Group Analysis:

This point will stand out when analyzing **Multiples Approach (Relative Valuation),** since it is crucial for investors to compare the performance of similar companies. In Pfizer Inc.'s case, it is important to notice that the company has **many competitors** in its business activity. Table 14 identifies the main competitors of Pfizer Inc. ranked by Net Sales volume in 2016, in which PFE was only outperform by Johnson & Johnson. All the companies in Table 14 are U.S. based. As Figure 24 and Table 15 suggests currently Pfizer Inc. has around 14% of market share in terms of net sales, which makes it one of the biggest players in the pharmaceutical industry. The peer group comparison is based on major pharmaceutical companies of comparable size (Table 16).

Table 16: Pfizer Inc. Peer Group

Source: AC analysis

Ticker	*Company Name*	*Recent Price ($)*	*Market Cap ($M)*	*Price/Earnings*	*Net Income ($M)*
PFE	Pfizer Inc.	33.86	201,641	28.94	7,215
BMY	Brystol-Myers Squibb	55.67	91,717	19.33	4,836
LLY	Eli Lilly	81,33	89,736	39.29	2,186
AGN	Allergan	243.05	85,964	NM	14,973
AZN	AstraZeneca	30.86	78,113	22.20	3,499
NVO	Novo Nordisk	38.78	76,108	18.21	5,382
JNJ	Johnson & Johnson	123.74	335,446	20.80	16,505
NVS	Novartis	77.06	202,445	27.52	6,712
GSK	GlaxoSmithKline	40.78	197,872	88.65	1,125
MRK	Merck	62.58	171,565	45.02	3,920
SNY	Sanofi	46.91	121,218	26.06	4,968

From a multiples perspective it is easy to find a truly comparable peer group due to the fact that there are many U.S. players with the **same comparable regulation** and the same core business, even if they produce different products. The process of peer group selection is explained in appendix I.

Table 14: Pfizer Inc. Peer Group

Source: AC analysis

Ticker	Company Name	Net Sales ($M)
JNJ	Johnson & Johnson	72,714
PFE	**Pfizer Inc.**	**52,824**
NVS	Novartis AG	48,518
MRK	Merck & Co	39,807
SNY	Sanofi	36,623
GSK	GlaxoSmithKline	34,897
AZN	AstraZeneca	24,633
LLY	Lilly	21,585
BMY	Bristol-Myers Squibb	19,965
NVO	Novo Nordisk	15,863
AGN	Allergan	14,570

Figure 24: Peer Group market share

Source: AC analysis

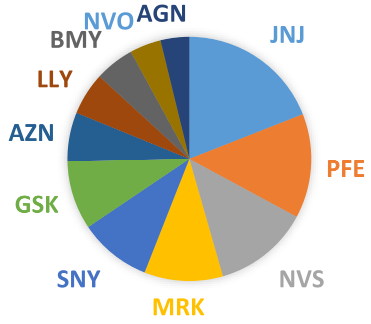


Table 15: Peer group market share

Source: AC analysis

Ticker	Company Name	Share
JNJ	Johnson & Johnson	19.04%
PFE	Pfizer Inc.	13.83%
NVS	Novartis	12.70%
MRK	Merck	10.42%
SNY	Sanofi	9.59%
GSK	GlaxoSmithKline	9.14%
AZN	AstraZeneca	6.45%
LLY	Eli Lilly	5.65%
BMY	Brystol-Myers	5.23%
NVO	Novo Nordisk	4.15%
AGN	Allergan	3.81%

Competitive Position:

In order to have an idea of Pfizer Inc. current position in the market, it is important to build a SWOT analysis for PFE's competitive position.

Figure 25: Porter´s five forces.

Source: AC analysis

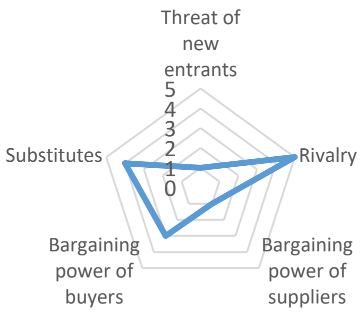


Table 17: SWOT analysis of PFE

Source: AC analysis

Strengths	Weakness
● One of the market leaders in the industry. ● Diversified portfolio of products. ● R&D focused. ● M&A increase good reputation. ● Strong brand name. ● Cash available to pay dividend and to service its debt.	● Strong competition of similar products in the market. ● High risk when spending R&D ● Healthcare fraud involvement

Opportunities	Threats
● Emerging markets demand. ● Expansion of biologic pharmaceutical market. ● Emerging companies in the sector can increase M&A deals. ● Strategic partnerships. ● Enter in generic markets with its own off-patent medicines. ● Increasing healthcare awareness.	● Government Regulation ● Economic slowdown ● Increasing competitors ● Next generation medicines ● Patent expiration

Overall, Pfizer Inc. strengths and opportunities are foreseen to overcome its weaknesses and threats in the future.

Porter five forces analysis (Figure 25):

Threat of new entrants (LOW):

There are several barriers to enter the market due to the huge costs associated with R&D for new medicines development. The costs associated with R&D are intense for new entrants into the pharmaceutical industry. Also capital requirements necessary in this industry to invest in new technology, machinery, and raw materials are constant and massive. Another issue for new entrants is the path of loyalty between the company and the customer that is already achieved by big the big companies in the industry. Another difficult issue for new entrants is the government policy regulation (FDA), which restricts the pharmaceutical industry in a way that potential new entrants can see their investments defeated by the tight regulation imposed in matter of efficiency in clinical trials.

Rivalry (HIGH):

Rivalry among competitors is high due to the already established companies in the sector along with the exit barriers and product differentiation. The large number of companies in the sector means that they have to compete for the same customers, resources and market leadership, which causes companies to go around patent issues and develop similar medicines that could treat the same health condition. The high costs related to exit barriers means that it's expensive to get rid of a product, service or subsidiary, forcing companies to put in all efforts necessary and fight for their space in the market. This high rivalry makes companies spend a large portion of their budgets on product differentiation marketing among competitors.

Bargaining power of suppliers (LOW):

Prior to the expiration of a patent, the cost of producing a blockbuster is lower when compared to the potential value of sales when the medicine reaches the market. When a generic medicine comes to the market, there are still many suppliers to choose from, the resources required to produce medicines are not restricted to a limited set of suppliers. But generally speaking, pharmaceutical companies owe those suppliers for their own security, integration and quality control, and when this is not the case, individual scientists usually sign away the intellectual rights to any discovered product while working for the company, leaving them with very low bargaining power. However, if an independent group of scientists makes a discovery, that company or institution which they are part of, can have a large bargaining power, but usually when it happens the two institution merge.

Bargaining power of buyers (MEDIUM):

The normal individuals that consume medicines not making part of any specific union or group, consist a low bargaining power, as well as the pharmacies that sell especially what doctors recommend. However, health care insurance agencies, hospitals and HMO's and government can have significant bargaining power because they can choose to not subsidize certain medicines or unbalance the subsidies between medicines.

Closeness to substitute products (HIGH):

When a medicine is in its period of exclusivity not many substitutes exist, but once the period of exclusivity ends, there are a variety of substitutes like generic medicines. Prolonging the exclusivity period, then, is a desirable strategy to keep pharmaceutical companies profitable.

5. Investment Summary

With a price target of **$37.35** and an **upside potential of 15%** comparing to the price at the end of 2016, using the **Discounted Cash Flow method** (Table 19), and **Low Risk** assessment, our recommendation stands for **Buy** (Table 18)**.** Besides the Discounted Cash Flow (DCF) method the **Multiples Valuation Approach** (Table 20) also supports our view with an average price target of **$37.66** and an upside potential of 16%.

Pfizer Inc. was evaluated as a consolidated group under those two different valuation methods, in which is contemplated the two main segments of the company business are complemented, the Innovative Health and Essential Health segments. Pfizer Inc. is a company focused on delivering high quality products, that could create significant value for patients and healthcare providers, and assessing that main objective and considering the company's current structure, it is predictable that the company would still develop and commercialize new medicines and vaccines through the Innovative Health segment accounting for 55% of the total Revenue in the future, while legacy brands that already lost or will soon lose market exclusivity will still be in charge of the Essential Health segment accounting for 45% of total Revenue in the Future.

For the foreseen period, we predict that **Earnings per Share (EPS)** will still increase due to the existing growth trend in the industry and also due to the typical feature of mergers and acquisitions of the industry that allows the acquirer to keep feeding its pipeline with outstanding products and at the same time guarantee a good level of return for company shareholders, lined up with company strategy. In 2016 the company registered values in a growing trend of $1.18 in terms of EPS, and consequently on dividends per share of $0.32. The possible existence of a merger or acquisition with another company of the industry is almost a certainty, but it's virtually impossible to predict who is going to be acquired or when or how.

Pfizer Inc. was characterized by a relative **stable stock performance** in 2016, with stock price achieving a minimum of $29.04 on March 6th, 2016 and a maximum of $36.92 on July 14th, and also registering 21.64% in terms of **annualized stock volatility**.

Investment Risks:

In this particular industry there are some **investment risks** that cannot be controlled by management like economic, market and operational risks, as well as the current price of medicines. The global economic slowdown from several countries affects directly the companies in the industry and the impact of pressure on prices induces a truly innovative medicine with proven improvements in safety and efficacy to still demand for premium prices and secure and excellent return on investment, but as the breakthrough products are not so easy to be approved and commercialized, the companies in this industry are in constant focus on cost cutting opportunities.

Besides those risks, it is important to understand that companies like Pfizer Inc. spend very expressive amounts of capital in R&D processes in order to develop their new products, which can take an average 12 years to fulfill all the criteria to be commercialized. The approval of a new medicine is under the supervision of the FDA, the regulatory entity. Those are the main investment risks surrounding the company's environment and the ones investors should be aware of.

Moreover, several sensitivity analysis were performed to assess the impact of changing variables that might affect DCF valuation, along with a deeper analysis of PFE's main risks identified in the Investment Risks section.

Table 18: Investment Grade and Risk classification matrix.

Source: BPI Rating Scheme

	LOW RISK	MEDIUM RISK	HIGH RISK
BUY	>15%	>20%	>30%
HOLD	>5% and <15%	>10% and <20%	>15% and <30%
REDUCE	>-10% and <5%	>-10% and <10%	>-10% and <30%
SELL	<-10%	<-10%	<-10%

Table 19: Discounted Cash Flow Valuation.

Source: AC analysis

EQUITY VALUE	222,707
NET DEBT	14,780
#OUTSTANDING SHARES	5,962
PRICE TARGET	$37.35
UPSIDE POTENTIAL	15%

Table 20: Multiples Valuation Approach.

Source: AC analysis

MULTIPLES RESUME	PRICE TARGET
EV/EBITDA	$38.35
EV/EBIT	$38.74
EV/SALES	$34.40
P/B	$37.26
P/SALES	$35.52
P/E	$41.70
AVERAGE PRICE TARGET	$37.66
AVERAGE UPSIDE POTENTIAL	16%

6. Valuation

Pfizer Inc.'s financial statements, **Balance Sheet** and **Profit and Losses statement (P&L),** for historical and forecast period are available in Appendix A and Appendix B respectively.

As stated before, the two different methods to evaluate PFE were an absolute valuation method and a relative valuation method. Concerning the absolute method valuation model, we used the **Discounted Cash Flow (DCF)** approach. With the amount of information available, this method was the most appropriate to reach an enterprise value for the company, which was computed using **Free Cash Flow to the Firm (FCFF)** of Pfizer Inc. as a group.

For the relative valuation model, the **Market Multiples** approach was implemented. To achieve a price target, a **Peer group** was selected from all competitors. The selected companies had to obey to a certain number of criteria in such a way that it could be possible to make them comparable companies in terms of risk, dimension and structure. In this valuation method we used several multiples in our analysis such as Enterprise Value to EBTIDA, Enterprise value to EBIT, Enterprise Value to Sales, P/B and P/E. A more detailed look into those multiples can be seen in Appendix I.

Forecast Analysis:

The **Total Revenue** of Pfizer Inc. accounts for $52,824 M in 2016, which consists basically in sales and services from the two existent segments: Innovative Health and Essential Health.

The global sales of medicines are forecasted to **rise** at a compound annual rate of 6.3% over the next 5 years according to Evaluate Pharma World Preview 2016, Outlook to 2022 report from the life science market intelligence firm. Also, the IMS forecasts a rise on sales around 6% according to IMS's Outlook for Global Medicines through 2021 report. The actual growth rate forecasted for this industry (Figure 26) is slightly slower than in the previous five years, which were characterized by patent cliff along with the global attention on Hepatitis C cure. We believe that this is the most likely scenario due to the combination of increasingly vocal politicians railing against United States medicines pricing, a weak global economy recovery, uncertainty created by Brexit and the United States presidential race, that have all contributed to a collapse in the forecasted growth rate for this industry. This 6.3% global growth is a blend of different growth rates in different regions and countries, which contribute to this final value's accuracy. Table 21 provides a summary of the forecasted growth rates for different countries.

The United States is leading the global market, being expected to growth around 6% in the next five years. China has been losing its pace in terms of growth, registering growth rates above 10% in the past, and now it is forecasted to have a more modest growth rate for the five coming years of around 5.6%. The developed markets like U.S., Japan, Germany, U.K., Italy, France, Spain, Canada, South Korea and Australia have gradually slid down in terms of growth as emerging countries markets have risen. The developed markets are forecasted to grow around 5.5%.

Global Revenue growth will be driven by different patterns over the next five years with developed countries balancing a substantial surge of growth focused on cost control, pricing, transparency, and outstanding innovative products across countries, while emerging markets are expected to grow slowly due to the widely varying economic, social and healthcare environment (Figure 27).

Moreover, we believe that after 5 years the industry will be more stabilized and predictable with a growth rate following the Real World GDP growth rate of 2.25%.

Figure 26: PFE Total Revenue Forecast
Source: AC Analysis

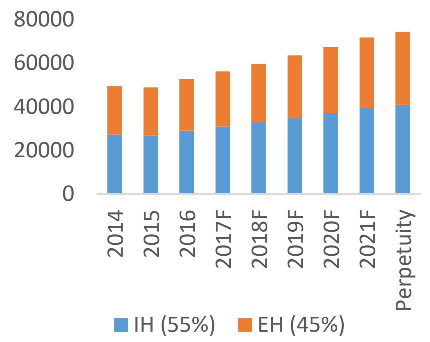
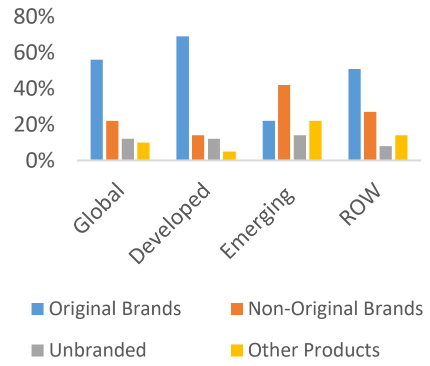


Table 21: Growth Forecast by Region
Source: AC Analysis

REGION	GROWTH
GLOBAL	6%
DEVELOPED MARKETS	5.5%
EMERGING MARKETS	7.5%
ROW	4.5%

Figure 27: World consumption
Source: AC Analysis



Cost of Goods and Services

In the last three years Pfizer Inc. accounted its Cost of Goods and Services as an average of 20.80% of total Revenue. This is an important measure that is influenced by the cost of global operations of the company's products, loss of exclusivity, acquisitions measured at fair value, foreign exchange rate, and costs incurred to implement the cost reduction initiatives. In the future, we believe that future costs of goods and services will increase as the total amount of revenues also increase, generating a future output in terms of gross margin as Figure 28 represents. This cost includes cost of finished goods, work in process and raw materials.

Operating Expenses

Operating Expenses consist in the sum of values related to Selling, Informational and Administrative Expenses (including internal and external costs of marketing, advertising, shipping and handling), Research and Development (costs of proprietary R&F efforts, and costs related to licensing agreements), Depreciation and Amortization (Property, Plant and Equipment, intangible assets and Goodwill) and Other Operating Expenses. In 2016 operating expenses registered a value of $28,489M, which represents 54% of revenues in that year. Considering the last three years, we believe that Operating expenses will register 54.65% of total revenues for the foreseen years. The heavy weight on this operating expenses is the cost related to Selling, Informational and Administrative Expenses that represents a flat percentage of revenues over years around 28%. Figure 29 represents the forecasted weight of each operating expense in total operating expenses, for the future.

Debt

Currently the company has a high level of net debt accounting for $24,236. Observing Table 22 and having in mind the company's strategy of maintaining credit rating high, we anticipate that the level of net debt might decrease over the next years and becoming more stable afterwards. We consider that Net Debt was computed by summing long term and short term debt, minus cash & cash equivalents and short term investments together. To forecast future values of net debt we used the assumptions made for each of these parameters. Having this in mind we assumed that the target capital structure in terms of debt for the company from 2016 to 2022 period would be 15.7% for debt and 84.3% for equity.

Capital Expenditures (CapEx)

Pfizer Inc. strategy in terms of capital expenditures takes into account the company's financial sustainability, maximizing its optimization investing in the improvement of their infrastructures that allows the company to keep feeding the pipeline with potential outstanding products. Regarding the historical values of Cash Flow Statement for capital expenditures, it is possible to notice that the amounts expressed are very stable and constant, and so we considered that this firm is already used to expend regular amounts of capital for this purpose. For the forecasted years we assume that CapEx will record very similar values to those registered in the previous years.

Depreciation & Amortization (D&A)

Observing Depreciation and Amortization available on the Cash Flow Statement of the company it is evident that Depreciation & Amortization registered very flat values in the previous years. Considering this, we believe that in the future the amounts related to Depreciation & Amortization will follow the same constant trend like it did in the past.

Figure 28: PFE Costs of Goods & Services

Source: AC Analysis, Millions of US Dollars

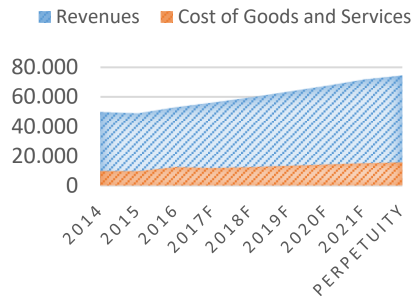


Figure 29: Operating Expenses

Source: AC Analysis

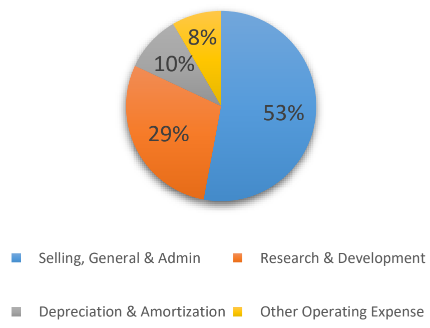


Table 22: Net Debt Forecast

Source: AC Analysis, Millions of US Dollars

YEAR	NET DEBT
2014	560
2015	15,609
2016	24,236
2017F	14,780
2018F	15,711
2019F	16,700
2020F	17,753
2021F	18,871
PERPETUITY	19,569

Net Working Capital (NWC)

The Changes in non-cash working capital were computed by summing the forecasted values in each year correspondent for changes in Accounts Receivable, Changes in Inventories, Changes in Accounts Payable and Increase or Decrease in other Operational Assets or Liabilities. Doing those computations it was possible to deduct the net working capital forecasted for the next years. The forecasted values that compose NWC were obtained using the assumptions related to the Cash Flow Statement. More detailed information can be seen in Appendix L.

Discounted Cash Flow:

The result of Discounted Cash Flow Valuation was a **price target** of $37.35 for the end of 2016 (Table 23), which means that Pfizer Inc. has an **upside potential** of 15%. In this valuation methodology PFE is currently **undervalued,** which leads our recommendation under this method for **Buy.** More detailed information about the procedures and computation of DCF are available in Appendix H.

As previously mentioned the Discounted Cash Flow valuation was computed considering Pfizer Inc. as a group following two major steps: calculate annual **FCFF** and the weighted average cost of capital, **WACC.** The FCFF provides an analysis of the future cash flow available for Pfizer Inc. capital suppliers after all operating expenses, while WACC provides an analysis of the required rate of return of PFE capital suppliers and the capital structure in the forecast period.

The EBIT is an important step to derive the FCFF, consisting in subtracting Cost of Goods and Services and all Operating Expenses from Total Revenues (Table 24). Its computation for the last three years and for the forecasted period are summarized in Table 25:

Table 25: EBIT Forecast
Source: AC Analysis, Millions of US Dollars

	2016	*2017F*	*2018F*	*2019F*	*2020F*	*2021F*	*Perp.*
Revenues	52,824	56,152	59,689	63,450	67,447	71,696	74,349
COGS	12,329	11,679	12,415	13,197	14,028	14,912	15,464
Op. Expenses	28,489	30,689	32,623	34.678	36,863	39,185	40,635
EBIT	**12,006**	**13,784**	**14,652**	**15,575**	**16,556**	**17,599**	**18,251**

We forecast **Future Cash Flows** of Pfizer Inc. to grow until the end of the valuation period using the following definition to computing FCFF:

$$\mathbf{FCFF = EBIT * (1 - Marginal\ Tax\ Rate) + D\&A - Net\ increase\ in\ WC - CapEx}$$

Table 26, discloses a brief summary of FCFF computations.

Table 23: DCF Output
Source: AC Analysis

Enterprise Value	**237,487**
Net Debt	14,780 M
Value of Equity	222,707 M
#Shares Outstanding	5,962 M
Price Target	$37.35
Current Price	$32.48

Table 24: EBIT assumptions
Source: AC Analysis

Revenues
Less: Cost of Goods and Services
Less: Selling, General & Admin.
Less: R&D expenses
Less: D&A
Less: Other Operating Expenses
= Operating Income (EBIT)

Table 26: FCFF Forecast

Source: AC Analysis, Millions of US Dollars.

	2016	*2017F*	*2018F*	*2019F*	*2020F*	*2021F*	*Perp.*
EBIT	12,006	13,784	14,652	15,575	16,556	17,599	18,251
Interest	1,186	1,393	1,481	1,574	1,673	1,778	1,844
D&A	5,757	5,484	5,466	5,569	5,506	5,514	5,530
NWC	368	489	519	552	587	624	647
CapEx	1823	1473	1564	1620	1552	1579	1584
FCFF	**15,105**	**16,060**	**16,710**	**17,564**	**18,427**	**19,320**	**19,900**

DCF Assumptions:

The **valuation period** considered in our work was 5 years, from 31 December 2016 to 31 December 2021. After this time period, the terminal value is added.

The **Discount Rate** applied to the future cash flows is derived from the actual **Weighted Average Cost of Capital (WACC).** To compute the WACC rate for our analysis we used the following expression (Table 27):

$$\mathbf{WACC} = K_e * \left[\frac{E}{E+D}\right] + K_d * \left[\frac{D}{E+D}\right] * (1-t)$$

In WACC calculation and assumptions, we considered a more reliable and detailed analysis to compute the Levered Beta, using first the Unlevered Beta from Aswath Damodaran's database and Modigliani-Miller analysis, to take into account PFE's target capital structure. Using the value of **Unlevered Beta** for industry we were able to compute a **Levered Beta** of 1.04 using the following expression:

$$\beta_l = \beta_u * \left[1 + \frac{D}{E}(1-t)\right]$$

Using the Levered Beta it was possible now to derive the **Cost of Equity (Ke)** for the company, under the **Capital Asset Price Model (CAPM).** A specific adjustment factor was used to account for certain operational risks existent in emerging countries (in the spirit of Godfrey and Espinoza, 1996), which we called "alpha" to simplify (Table 28). Then, the **Cost of Equity** represents the rate of return that stakeholders require for the company. Our computations show a cost of equity of 10.29%, which was computed using the following formula:

$$K_e = R_f + \beta_e * ERP + \alpha$$

In what concerns the **Risk Free Rate (Rf),** we used the 10 years United States Treasury Bond, which is perceived as a safe investment and coincides with the fact the company is U.S. based. We used as risk free rate a value of 2.17%.

Since the company is U.S. based, we decided to use the **Equity Risk Premium (ERP)** available on Aswath Damodaran for our computations, using a value of 6%. This value is also approximately the historical long-run ERP in the U.S. since the 1920s.

Table 27: DCF assumptions resume

Source: AC Analysis

RISK FREE RATE	2.17%
EQUITY RISK PREMUM	6%
BETA LEVERED	1,04
COST OF EQUITY	10.45%
COST OF DEBT	2.46%
AFTER TAX COST OF DEBT	1.96%
MARGINAL TAX RATE	20%
WEIGHT OF DEBT	15.7%
WEIGHT OF EQUITY	84.3%
WACC	9.12%

Table 28: Alpha computation

Source: AC Analysis

Region	*Risk Premium*
Asia	1.66%
South America	2.28%
Europe	1.43%
Western Europe	2.87%
Average	2.06%

The **Cost of Debt (Kd)** is considered in our analysis as the effective rate that a company pays on its debt. We calculate the cost of debt by dividing the **total interest expenses** faced by PFE by the total debt issued. Our results in terms of Cost of Debt stand for 2.46%, which is also in agreement with the company's investment grade rating.

By analyzing the last three years of **Effective Income Tax Rate** of the company, we can observe a clear descendent trend from 25% in 2014 to 13% in 2016. Considering this descendent trend, but with a more conservative approach, we assume an average value for the **Tax Rate (T)** of 20%.

Regarding the **Terminal Value (TV),** we considered that the **Perpetual Growth Rate (g)** should be a value that represents the expected percentage value of Real World GDP growth for the end of the forecasted period, which in this case would be 2.25%. For a global player such as PFE the assumption seem appropriate. Thus, the following expression was used:

$$\mathbf{TV} = [\mathbf{FCFF} * (\mathbf{1} + \mathbf{g})]/[(\mathbf{WACC} - \mathbf{g})]$$

Multiples Valuation:

In order to complement DCF valuation, we used the **Forecast Multiples Approach** to support our analysis to obtain the price target. As stated before several multiples were used in our analysis: Enterprise Value to EBITDA (EV/EBITDA), Enterprise Value to EBIT (EV/EBIT), Enterprise Value to Sales (EV/Sales), P/B (Price-to-Book), P/E (Price-to-EPS) and P/Sales (Price-to-Sales).

For the EV/EBITDA multiple**,** our computations revealed a price target of $38.35 at the end of 2016 representing an upside potential of 18% (Table 29).

In relation to P/B, we reached a price target of $37.26 for the same period mentioned before, representing an upside potential of 15% (Table 30).

The results obtained with **Multiple Valuation,** support the Discounted Cash Flow Valuation in what respects to the price target allowing us to conclude that Pfizer Inc. is currently **undervalued,** showing a very small difference of 1% in terms of upside potential when compared to DCF. With this approach, our recommendation is very close to the DCF one, and since 16% is a very close value to the 15% of DCF, our recommendation stands still for **Buy.** A general picture of all multiples analyzed for this report is displayed on Table 31.

Multiples Assumptions

At the beginning of our analysis we started with ten companies that could be potential Peers and after applying different criteria we selected a group of four comparable companies. Obeying to this criteria, the selected companies had to be U.S. based and equivalent in terms of size (sales, market capitalization, total assets and net income).

Table 32 represents all Peers selected as comparable in the Multiples Valuation, and further information about the criteria applied is available on Appendix I.

The summary of all multiples used in this approach is presented next in Table 33, which after compilation in average of all price targets resulted in an average price target of $37.66 and an upside potential of 16%. Table 33 is represented below.

Table 29: EV/EBITDA Multiple

Source: AC Analysis

	2017F
PFE EBITDA	19,267 M
Peers Multiple	12,64
PFE Enterprise Value by Peers	243,445 M
Net Debt	14,780 M
Equity Value by Peers	228,666 M
Shares Outstanding	5,962 M
Price Target	$38,35
Current Price	$32,48
Upside potential	18%

Table 30: P/B Multiple

Source: AC Analysis

	2017F
PFE total equity	72,799 M
Peers Multiple	3.05
Book Value	11.99
Shares Outstanding	5,962 M
Price Target	$37.26
Current Price	$32.48
Upside potential	15%

Table 31: Multiples output

Source: AC Analysis

Multiples Resume	**Price Target**
EV/EBITDA	$38.35
EV/EBIT	$38.74
EV/Sales	$34.40
P/B	$37.26
P/Sales	$35.52
P/E	$41.70
Average Price Target	$37.66
Upside potential	16%

Table 33: Multiples output

Source: AC Analysis

Companies	EV/EBITDA	EV/EBIT	EV/Sales	P/B	P/E	Price/Sales
PFE	11.88	17.18	4.19	3.05	18.32	3.92
JNJ	11.85	14.13	3.88	4.21	17.84	4.11
NVS	14.77	22.71	4.26	2.73	25.71	4.02
MRK	13.83	Outlier	4.11	3.55	21.69	3.87
SNY	10.86	17.31	3.13	1.73	23.01	2.94
Average	12.64	17.83	3.92	3.05	21.31	3.77
Price Target	$38.35	$38.74	$34.40	$37.26	$41.70	$35.52

Table 32: Peer Analysis

Source: AC Analysis

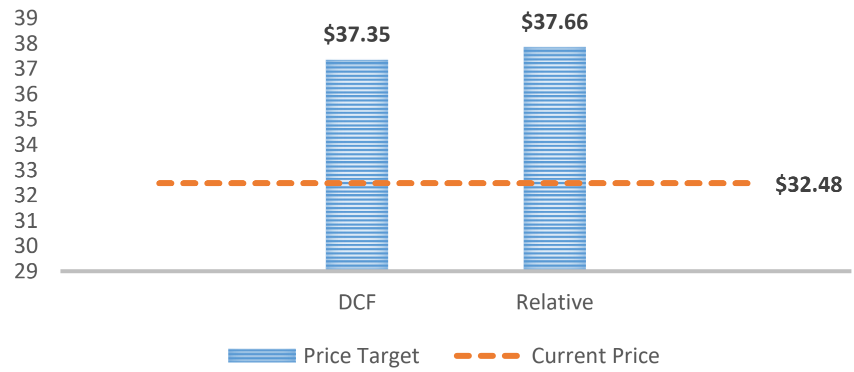
Companies	**Peer Selection**
BMY	**NO**
LLY	**NO**
AGN	**NO**
AZN	**NO**
NVO	**NO**
JNJ	**YES**
NVS	**YES**
GSK	**NO**
MRK	**YES**
SNY	**YES**

Aggregating all multiples of our analysis and using all forecasted fundamentals for 2017F, it was possible to conclude that Pfizer Inc., is **undervalued,** solidifying the conclusion from the DCF valuation.

A summarized version that compares the different price target to current price, obtained from these two fundamental valuation approaches is presented in Table 34:

Table 34: Summary Price Targets

Source: AC Analysis



7. Financial Analysis

Profit & Loss

In our analysis it is possible to see that **Net Income** is forecast to develop higher values in the future than it did in the past. This is also verified for the foreseen values of **EBIT** and **EBITDA**, increasing values for the future when compared to the last 3 years. This happens because of the assumptions made, mainly by considering Pfizer Inc. will increase revenues around 6% a year in the next five years, after the recent period of reduced growth in developed economies. When looking at forecasted values of the company, we can state that investments related with acquisition of fixed production assets or **CapEx**, will stay flat to the end of the period and not growing as fast as revenues. This happens because the company is already accustomed to have those expenses accounted in their cash flow statement, and it is possible to say that it actually benefits future values in terms of EBIT and EBITDA, since **D&A** are also forecast to stay stable for the next five years. With respect to Net Income as measure of Income Statement performance, we can say that Pfizer Inc. shows very reasonable values for the future considering the historical past of the company (Figure 30). EBITDA Margin shows a decrease from 38% to 33% from 2014 to 2016, and for the future it is predictable that this value ranges from 34% to 32%, while EBIT Margin is expected to have a more regular value for the future staying stable around 25%, as Figure 31 shows.

In terms of **Costs** for the forecasted period, we think that the cost structure of the Pfizer Inc. will record similar values to those in the past, and as revenues increase, it is normal in our perspective to assume that the costs of goods and services and operational costs goes up as well. For the future, cost of goods and services represent around 28% of total costs, while operational costs account for around 72% of total costs, for the next five years.

Equity Ratio

From 2014 to 2016 we can see a sizeable decrease in the equity ratio from 42.7% to 34.9%, which means the company's assets are being financed with higher levels of debt and consequently investment made by the owner's has been decreasing. Following the same logic about this **solvency** ratio, we forecast that it will increase from 2016 to 2017 and stay stable from beyond.

Dividend Policy

Dividend payout ratio is an important performance ratio to measure the company's sustainability. Pfizer Inc. like any other company is very careful and reluctant when cutting dividends, since it can drive the price of stock down and reflect a poor management ability. Having this in mind, Pfizer Inc. recorded a very high dividend payout ratio, around 100% in the last three years, leading us to conclude that the company is actually delivering more money to shareholders than it is earning and in the future the company is most likely to be forced to reduce this payout ratio. The currently strong cash position of Pfizer Inc. along with its well-known ability to generate enormous amounts of free cash every year, might keep the company aside from slashing its dividends soon, but the actual trend pharmaceutical companies have on engaging in heavy mergers and acquisitions deals could induce impacts on its balance sheet and triggering a dividend reduction.

Return on Equity (ROE):

Since 2012 Return on Equity been decreasing sharply, registering its lowest value in 2015 around 11%. This weak performance of ROE comparing to other companies of

Figure 30: P&L performance

Source: AC Analysis, Millions of US Dollars.

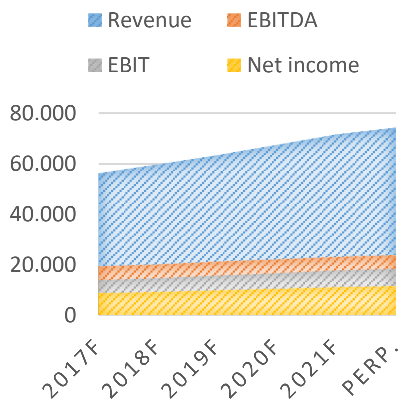


Figure 31: EBIT/EBITDA Margin

Source: AC Analysis, Millions of US Dollars

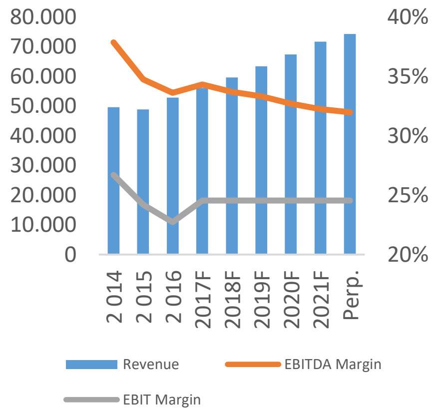
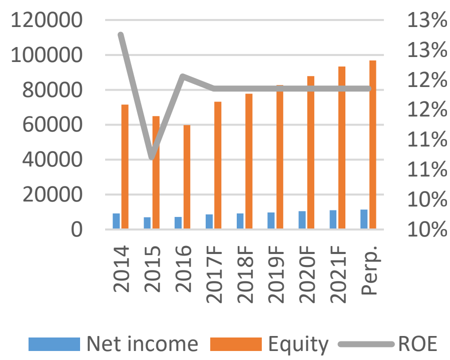


Figure 32: Return on Equity

Source: AC Analysis, Millions of US Dollars

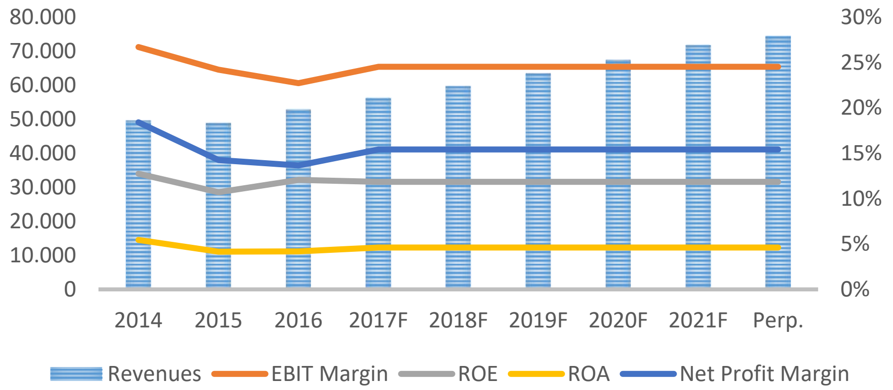


the industry is derived by the weak performance of net income that accounted its lowest value in 2015, which sounded like an alarm especially due to the diminishing level of equity in the company balance sheet in that historical period, along with an increase in the level of debt contributed to boost the ROE, but it still had a low value though. But, unlikely what happened since 2012, in 2016 shareholders received 12% profit per each dollar of equity invested, suggesting the company didn't lose its ability to generate profit (Figure 32). Also, **Return on Assets (ROA),** performed the same way as ROE having a low performance from 2012 to 2015, and coming back up in 2016 suggesting the company recovered the ability to convert its assets into net profit.

Table 35 provides a summarized analysis of historical indicators from the past three years and the forecasted values for those indicators in the period indicated before.

Table 35: Summary Financial Performance

Source: AC Analysis, Millions of US Dollars.



8. Investment Risks

Market Risk | Generic Competition (MR1)

Competition from generic medicines is a challenge for all Pfizer Inc. products around the world and can have a significant impact on revenues. Upon the date of the expiration or loss of patent protection of the company's products, PFE can lose the major portion of revenue in a very short time due to a generic version of patented products made by generic manufacturers. A few innovative products of Pfizer Inc. are expected to face generic competition in the next few years, a reality that also affects licensing and collaboration partners impacting co-promotion and rights to such products.

Market Risk | Competitive Products (MR2)

It is impossible to predict with accuracy the timing and impact resulted from the introduction of competitive products that treat diseases and conditions similar to those developed by the company. The introduction of competitive products can lead to a fall on sales, considering that products that compete with the company's products are launched from time to time. Pfizer Inc. also produces generic and biosimilar products to compete with branded products from competitors, which can impact sales in case the company secures the position to be the first entering the market. The dependence on innovative products is very significant, in such a way that any issue related to it, despite its nature, can directly affect sales. Figure 34 contemplates an explanation on how generic and competitive products enter the market.

Market Risk | Research & Development (MR3)

In order to strengthen the company's business, PFE is in constant expenditures on R&D to refuel product lines over time and offsetting revenue losses when products lose market exclusivity, assuring also earning growth. Constant investment in R&D and delivering return to shareholders is a big challenge, because R&D expenses may not be correctly matched between science and markets, leading to a failure when developing a new product, even though it is an effort to build an efficient and strong pipeline of products. There is no guarantee that the strategies in terms of R&D to develop new products will deliver value in the future or a satisfying result, which could affect profitability in the future.

Regulatory and Legal Risk | Pricing (RL1)

International and U.S. based regulations requiring price controls and limitations in terms of patient access to certain therapies can impact the future results of Pfizer Inc. At the moment there are regulatory and legislative issues in many countries concerning pricing pressures of the company's products. Also, a very competitive insurance market puts pressure to shrink prices through more enhanced discounts and a more rigorous bidding or purchasing review process. Governments provide healthcare at low direct costs to patients and try to regulate prices aiming to control government costs in the healthcare system, following the global economic pressures. It is expected that pressures on pricing components will continue and consequently impacting the company's operating results. Also, other legislation or regulation including different patent laws, allowance to import foreign medicines at prices regulated by other entities or the use of other methodologies based on cost difference might affect Pfizer Inc. results.

Regulatory and Legal Risk | FDA Approval (RL2)

Innovation is critical for the success of the company and the outcome of the complex process of developing a new product involves uncertainty, costs and risks. Products

Figure 33: PFE risk matrix

Source: AC Analysis

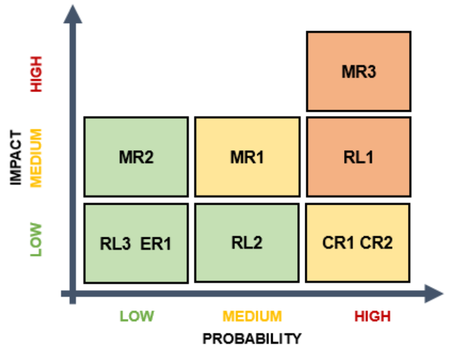


Figure 34: PFE market risks

Source: AC Analysis

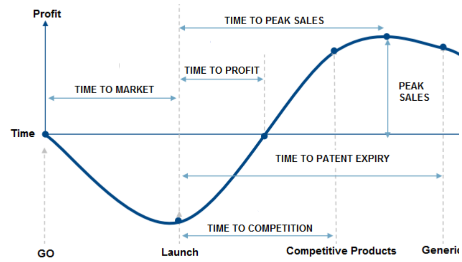


Table 36: PFE list of medicines waiting for approval by FDA

Source: Company Data

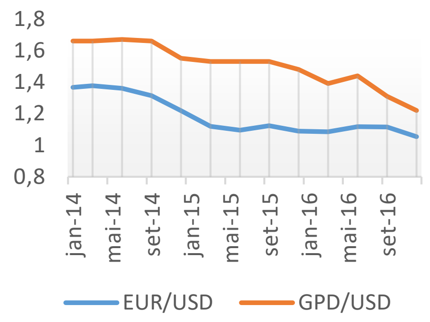
Last Stage Development Candidates

- Avelumab
- Decomitinib
- Ertugliflozin
- Biosimilar to Remicade by Janseen
- Biosimilar to Herceptin by Genentech
- Biosimilar to Rituxan by Biogen
- Biosimilar to Avastin by Genentech
- Biosimilar to Humira by AbbVie
- Rivipansel
- Talazoparib
- Tanezumab

take many years to be approved, medicines under development can and will with high probability fail at any stage of the approval process. The knowledge and experience the company already has in the industry allows one to state that it is completely unpredictable the final decision of regulatory authority at each stage, depending exclusively on the assessment by those authorities of the benefit-risk profile suggested by all safety information submitted. The final decisions of FDA can significantly affect the commercial availability of products and there is no guarantee that the company can meet all FDA requirements for future approval. Also there are many considerations that can affect the marketing of the company products around the world, aiming basically safety and efficacy of products that can directly affect profits. Regulatory scrutiny by regulatory authorities has been increasing, with FDA and other authorities focusing on product safety and risk benefit profile. Table 36 shows the currently products on the company's pipeline waiting for FDA approval.

Figure 35: Historical Exchange Rates

Source: AC Analysis



Regulatory and Legal Risk | Intellectual Property (RL3)

The long-term success of the company relies on the capacity to create competitive products. Protecting them involves patenting, trade mark, copyright, trade secret, protection laws, confidentially and license agreements with employees to protect intellectual property and proprietary rights. Aiming to maintain an adequate intellectual property protection, the company seeks to prevent third parties from launching new products using technology and marketing strategies similar to Pfizer Inc.'s. The risks related with this particular matter involve probability of failure in future patent applications, denied patent extension, or lack of claims in patents to protect the company against third parties, since claims differ from country to country where different patent laws exist. A scenario in which the company fails to implement such intellectual property protection from third parties, can affect the company's operating results and financial condition.

Economic Risk | Global Economic Environment (ER1)

The global economic environment didn't have a noticeable impact until now on the company's liquidity or capital resources. Regarding operating cash flows, financial assets, access to capital markets and availability of lines of credit the company currently has, it is reasonable to assume Pfizer Inc. will maintain the ability to meet its liquidity needs for the foreseeable future. Although there is no expectation that company liquidity will be affected in the future, there is no guarantee that possible future changes in global financial markets and global economic conditions will not affect capital resources or the existent capacity to obtain financing. It is impossible to predict the likelihood of future changes in these economic conditions or the impact they might have in results and financial condition of the company.

Corporate Risk | Foreign Exchange Rate (CR1)

Significant amounts of revenues, earnings and international assets are exposed to foreign exchange rates. In 2016, international revenues represented 50% of total revenues. Since Pfizer Inc. operates worldwide, it is directly exposed to multiple foreign currencies and changes in those currencies can impact directly revenues and expenses. The main financial exposure arises from short term and long term intercompany receivables and payables, and with less expression from investment and debt held in other currencies. In order to protect against longer term movements, Pfizer Inc. is currently hedging forecast intercompany sales in other currencies. Also, the company uses foreign currency swaps and foreign currency forward-exchange contracts to protect against possible declines in reported net investments of foreign business entities. Figure 35 represents the two major currencies and fluctuations related to U.S. Dollar.

Corporate Risk | Interest Rate Risk (CR2)

Pfizer Inc. is subject to interest rate risk on investments and borrowings, managing interest rate risk focusing on the company's immediate liquidity needs. The company strives to adopt a floating rate in what respects to its investments and long term borrowings, which might be influenced by the risk of reduction of the short term interest rate, resulting in less interest income. To protect against this, the company uses interest rate swaps in its investment portfolio.

The general risk matrix is represented in Figure 33.

Risks to Price Target:

In order to analyze the possible changes that could occur in the price target obtained ($37.35), we perform a sensitivity analysis to assess the impact of certain key variables considered crucial in the DCF valuation method.

The key variables chosen to perform the sensitivity analysis were the **Terminal Growth Rate (g), the Weighted Average Cost of Capital (WACC), the Equity Risk Premium (ERP), the Levered Beta** and **the Income Tax Rate.**

The outcome of the sensitivity analysis performed is presented below, and represents the changes in current price ($32.48) according to the variation of the key variables.

Table 37: Change in Terminal Growth Rate

Source: AC Analysis

Terminal Growth Rate	1.95%	2.05%	2.15%	2.25%	2.35%	2.45%	2.55%
Price Target	$36.16	$36.55	$36.94	$37.35	$37.77	$38.21	$38.65
Upside Potential	11.3%	12.5%	13.7%	15%	16.3%	17.6%	19%

As it is possible to see in Table 37, the terminal growth rate directly influences the Terminal Value and consequently the Enterprise Value, and is clearly reflected on the price target performance. Following the investment grade matrix represented in Figure 1, in Research Snapshot section, a lower terminal growth rate would suggest for **Hold**, since there would be a **Medium** risk assessment, and the opposite would happen if the terminal growth rate behave in an increasing way.

Table 38: Change in WACC

Source: AC Analysis

WACC Rate	6.65%	7.39%	8.21%	9.12%	10.03%	11.04%	12.14%
Price Target	$59.88	$50.77	$43.39	$37.35	$32.78	$28.93	$25.67
Upside Potential	84.4%	56.3%	33.6%	15%	0.9%	-10.9%	-21%

Also, considering WACC rate is a very important measure for DCF method, it is possible to verify that a very small variation in terms of the WACC rate would mean very significant changes in the price target. In Table 38, it is possible to denote that a higher penalty in the WACC rate would stand for a lower price target and the opposite would happen when the there is a lower penalty. In this case, we can say that a lower WACC rate would cause a risky upside potential, and a higher WACC rate would stand for a **Reduce** recommendation.

Table 39: Change in ERP

Source: AC Analysis

Equity Risk Premium	5.7%	5.8%	5.9%	6%	6.1%	6.2%	6.3%
Price Target	$38.91	$38.38	$37.86	$37.35	$36.86	$36.38	$35.91
Upside Potential	19.8%	18.2%	16.6%	15%	13.5%	12%	10.6%

In our base-case scenario valuation, we considered an ERP of 6%, as suggested by Aswath Damodaran and in line with the long-term historical data for the United States. Considering an alternative range of values from 5.7% to 6.3% our valuation results in price targets ranging from $35.91 to $38.91, which are not substantially different from our base-case valuation of $37.35, and confirm the upside potential when compared to the current price of $32.48, justifying our Buy recommendation (Table 39).

Table 40: Change in Beta

Source: AC Analysis

Levered Beta	0.89	0.94	0.98	1.04	1.09	1.14	1.2
Price Target	$42.18	$40.52	$38.91	$37.35	$35.91	$34.52	$33.17
Upside Potential	30%	25%	20%	15%	11%	6%	2%

Regarding our valuation scenario we used the Unlevered Beta suggested by Aswath Damodaran to compute the Levered Beta (1.04) for the DCF valuation method, as previously stated. As we can see in Table 40, the changes in Beta are not significant and from a range of 0.89 to 1.2, they all suggest an upside potential and support our recommendation for **Buy.**

Table 41: Change in Tax Rate

Source: AC Analysis

Tax Rate	14%	16%	18%	20%	22%	24%	26%
Price Target	$37.38	$37.37	$37.36	$37.35	$37.34	$37.34	$37.33
Upside Potential	15.08%	15.06%	15.03%	15%	14.98%	14.95%	14.92%

The changes in the Tax Rate disposed on Table 41, show very small evidence that it might affect the price target. Ranging from 14% to 26%, is not reasonable to say that a difference between $37.38 and $37.33 is relevant. Moreover, the sensitivity analyzes performed in this specific parameter supports our **Buy** recommendation, since it shows upside potential in every scenario.

Table 42: Change in Terminal Growth and WACC

Source: AC Analysis

	6.65%	7.39%	8.21%	9.12%	10.03%	11.04%	12.14%
1.95%	$56.6	$48.5	$41.7	$36.1	$31.9	$28.3	$25.2
2.05%	$57.7	$49.2	$42.3	$36.5	$32.2	$28.5	$25.3
2.15%	$58.7	$50	$42.8	$36.9	$32.5	$28.7	$25.5
2.25%	$59.9	$50.8	$43.4	$37.3	$32.8	$28.9	$25.7
2.35%	$61.1	$51.6	$44	$37.8	$33.1	$29.2	$25.8
2.45%	$62.3	$52.5	$44.6	$38.2	$33.4	$29.4	$26
2.55%	$63.6	$53.4	$45.2	$38.6	$33.7	$29.6	$26.2

Table 42 summarizes the impact of Terminal Growth Rate and WACC rate together, and it is possible to see that both parameters indicate for a downside potential whenever WACC rate is higher than 10.03%, and an upside potential whenever is lower than 10.03%.

Table 43: Change in Beta and ERP

Source: AC Analysis

	0.89	0.94	0.98	1.04	1.09	1.14	1.2
5.7%	$43.88	$42.18	$40.52	$38.91	$37.43	$35.99	$34.59
5.8%	$43.30	$41.61	$39.97	$38.38	$36.91	$35.48	$34.10
5.9%	$42.73	$41.06	$39.43	$37.86	$36.40	$34.99	$33.63
6%	$42.18	$40.52	$38.91	$37.35	$35.91	$34.52	$33.17
6.1%	$41.64	$40	$38.40	$36.86	$35.44	$34.06	$32.72
6.2%	$41.11	$39.49	$37.91	$36.38	$34.97	$33.61	$32.29
6.3%	$40.60	$38.99	$37.43	$35.91	$34.52	$33.17	$31.86

Table 43 summarizes the impact of changes in Beta and ERP together, and as we can see the impacts of both parameters is almost insignificant in a range of values from 0.89 to 1.2 in terms of Beta and from 5.7% to 6.3% in terms of ERP. The table reveal an upside potential supporting our recommendation of **Buy.**

After performing the sensitive analysis, we analyze possible outcomes in the price target when some parameters involved in the valuation method change. We conclude that the WACC rate used in the valuation method is the most sensible parameter, and the one that most influences the price target performance. On the other hand, the parameter that has almost an insignificant influence in the price target is the variation of tax rate, since all variations tested in the range show a upside potential in every hypothesis.

Appendices

Appendix A: Statement of Financial Position, in thousands

	2014	2015	2016	2017F	2018F	2019F	2020F	2021F	Perpetuity
Total Assets									
Cash, Cash Equivalents & STI	36,122	23,290	17,850	28,878	30,698	32,632	34,687	36,873	37,868
Cash & Cash Equivalents	3,343	3,641	2,595	3,576	3,801	4,041	4,295	4,566	4,689
ST Investments	32,779	19,649	15,255	25,302	26,896	28,591	30,392	32,307	33,179
Accounts & Notes Receiv	8,401	8,176	8,225	9,217	9,798	10,415	11,071	11,768	12,086
Accounts Receivable, Net	8,401	8,176	8,225	9,217	9,798	10,415	11,071	11,768	12,086
Notes Receivable, Net	—	—	—	—	—	—	—	—	—
Inventories	5,663	7,513	6,783	7,419	7,886	8,383	8,911	9,473	9,728
Raw Materials	510	867	793	806	856	910	968	1,029	1,056
Work In Process	3,248	3,932	3,696	4,042	4,296	4,567	4,855	5,161	5,300
Finished Goods	1,905	2,714	2,294	2,572	2,734	2,906	3,089	3,283	3,372
Other Inventory	—	—	—	—	—	—	—	—	—
Other ST Assets	5,409	4,825	6,091	6,048	6,429	6,834	7,264	7,722	7,931
Derivative & Hedging Assets	1,059	586	566	825	877	932	991	1,053	1,081
Assets Held-for-Sale	—	9	801	—	—	—	—	—	—
Deferred Tax Assets	2,566	2,662	3,041	3,066	3,259	3,464	3,682	3,914	4,020
Taxes Receivable	—	—	—	—	—	—	—	—	—
Discontinued Operations	—	—	—	—	—	—	—	—	—
Misc ST Assets	1,784	1,568	1,683	1,870	1,988	2,113	2,246	2,388	2,452
Total Current Assets	55,595	43,804	38,949	51,562	54,810	58,263	61,934	65,836	67,613
Property, Plant & Equip, Net	11,760	13,766	13,318	14,431	15,340	16,306	17,334	18,426	18,923
Property, Plant & Equip	24,986	27,268	28,125	29,841	31,721	33,720	35,844	38,102	39,131
Accumulated Depreciation	13,226	13,502	14,807	15,410	16,381	17,413	18,510	19,677	20,208
LT Investments & Receivables	17,518	15,999	7,116	15,261	16,223	17,245	18,331	19,486	20,012
LT Investments	17,518	15,999	7,116	15,261	16,223	17,245	18,331	19,486	20,012
Other LT Assets	82,692	93,812	112,232	106,914	113,649	120,809	128,420	136,510	140,196
Total Intangible Assets	77,236	88,598	107,097	101,038	107,403	114,169	121,362	129,008	132,491
Goodwill	42,069	48,242	54,449	53,651	57,031	60,624	64,443	68,503	70,353
Other Intangible Assets	35,167	40,356	52,648	47,387	50,372	53,546	56,919	60,505	62,139
Deferred Tax Assets	1,944	1,794	1,812	2,063	2,193	2,331	2,478	2,634	2,705
Derivative & Hedging Assets	881	944	689	938	997	1,060	1,127	1,198	1,230
Prepaid Pension Costs	—	572	300	—	—	—	—	—	—
Misc LT Assets	2,632	1,904	2,334	2,550	2,710	2,881	3,063	3,255	3,343
Total Noncurrent Assets	111,970	123,577	132,666	136,606	145,212	154,360	164,085	174,423	179,132
Total Assets	167,566	167,381	171,615	188,168	200,023	212,624	226,020	240,259	246,746
Liabilities & Shareholders' Equity									
Payables & Accruals	7,293	8,249	9,404	9,245	9,827	10,446	11,104	11,804	12,122
Accounts Payable	3,210	3,620	4,536	4,205	4,470	4,752	5,051	5,370	5,515
Accrued Taxes	531	418	437	515	548	582	619	658	676
Interest & Dividends Payable	1,711	1,852	1,944	2,044	2,173	2,310	2,455	2,610	2,680
Other Payables & Accruals	1,841	2,359	2,487	2,480	2,636	2,802	2,979	3,166	3,252
ST Debt	5,141	10,159	10,688	9,619	10,225	10,870	11,554	12,282	12,614
ST Borrowings	2,130	6,439	6,463	5,561	5,911	6,284	6,679	7,100	7,292
ST Capital Leases									
Current Portion of LT Debt	3,011	3,720	4,225	4,059	4,314	4,586	4,875	5,182	5,322
Other ST Liabilities	9,153	10,990	11,023	11,570	12,299	13,074	13,898	14,773	15,172
Deferred Revenue		0							
Derivatives & Hedging	92	645	1,247	724	769	818	869	924	949
Discontinued Operations	—	—	—	—	—	—	—	—	—
Misc ST Liabilities	9,061	10,345	9,776	10,847	11,530	12,256	13,028	13,849	14,223
Total Current Liabilities	21,587	29,398	31,115	30,434	32,352	34,390	36,556	38,859	39,909
LT Debt	31,541	28,740	31,398	34,038	36,183	38,462	40,885	43,461	44,635
LT Borrowings	31,541	28,740	31,398	34,038	36,183	38,462	40,885	43,461	44,635
LT Capital Leases									
Other LT Liabilities	42,817	44,245	49,262	50,564	53,749	57,135	60,735	64,561	66,304
Accrued Liabilities									
Pension Liabilities	10,264	8,119	8,172	9,879	10,502	11,163	11,867	12,614	12,955
Deferred Revenue									
Deferred Tax Liabilities	23,317	26,877	30,753	29,993	31,882	33,891	36,026	38,296	39,330
Derivatives & Hedging	597	1,062	444	789	839	892	948	1,008	1,035
Misc LT Liabilities	8,639	8,187	9,893	9,902	10,526	11,189	11,894	12,643	12,985
Total Noncurrent Liabilities	74,358	72,985	80,660	84,602	89,932	95,598	101,620	108,022	110,939
Total Liabilities	95,945	102,383	111,775	115,036	122,284	129,988	138,177	146,882	150,848
Preferred Equity and Hybrid Capital	29	26	24	29	31	33	35	38	39
Share Capital & APIC	79,432	81,475	83,146	90,650	96,361	102,432	108,885	115,745	118,870
Common Stock	455	459	461	511	543	577	614	652	670
Additional Paid in Capital	78,977	81,016	82,685	90,140	95,818	101,855	108,272	115,093	118,200
Treasury Stock	73,021	79,252	84,364	87,811	93,343	99,224	105,475	112,120	115,147
Retained Earnings	72,176	71,993	71,774	80,250	85,306	90,680	96,393	102,466	105,232
Other Equity	-7,316	-9,522	-11,036	-10,319	-10,969	-11,660	-12,395	-13,176	-13,532
Equity Before Minority Interest	71,300	64,720	59,544	72,799	77,386	82,261	87,443	92,952	95,462
Minority/Non Controlling Interest	321	278	296	333	353	376	399	425	436
Total Equity	71,621	64,998	59,840	73,132	77,739	82,637	87,843	93,377	95,898
Total Liabilities & Equity	167,566	167,381	171,615	188,168	200,023	212,624	226,020	240,259	246,746

Appendix B: Income Statement, in thousands

	2014	2015	2016	2017F	2018F	2019F	2020F	2021F	Perpetuity
Revenue	49,605	48,851	52,824	56,152	59,689	63,450	67,447	71,696	73,632
Sales & Services Revenue	49,605	48,851	52,824	56,152	59,689	63,450	67,447	71,696	73,632
Cost of Revenue	9,577	9,648	12,329	11,679	12,415	13,197	14,028	14,912	15,315
Cost of Goods & Services	9,577	9,648	12,329	11,679	12,415	13,197	14,028	14,912	15,315
Gross Profit	40,028	39,203	40,495	44,473	47,275	50,253	53,419	56,785	58,318
Other Operating Income	—	—	—	—	—	—	—	—	—
Operating Expenses	26,779	27,379	28,489	30,689	32,623	34,678	36,863	39,185	40,243
Selling, General & Admin	14,097	14,809	14,837	16,251	17,274	18,363	19,519	20,749	21,309
Research & Development	8,393	7,690	7,872	8,903	9,464	10,060	10,693	11,367	11,674
Depreciation & Amortization	4,039	3,728	—	2,952	3,138	3,336	3,546	3,770	3,872
Other Operating Expense	250	1,152	5,780	2,584	2,747	2,920	3,104	3,299	3,388
Operating Income (Loss)	13,249	11,824	12,006	13,784	14,652	15,575	16,556	17,599	18,075
Non-Operating (Income) Loss	1,009	2,859	3,655	2,771	2,946	3,131	3,329	3,538	3,634
Interest Expense, Net	935	728	716	885	941	1,001	1,064	1,131	1,161
Interest Expense	1,360	1,199	1,186	1,393	1,481	1,574	1,673	1,778	1,826
Interest Income	425	471	470	507	539	573	609	648	665
Foreign Exch (Gain) Loss	0	806	0	309	328	349	371	394	405
(Income) Loss from Affiliates	—	—	—	—	—	—	—	—	—
Other Non-Op (Income) Loss	74	1,325	2,939	1,577	1,676	1,782	1,894	2,014	2,068
Pretax Income	12,240	8,965	8,351	11,012	11,706	12,444	13,228	14,061	14,441
Income Tax Expense (Benefit)	3,121	1,990	1,123	2,338	2,485	2,642	2,808	2,985	3,066
Current Income Tax	2,799	2,010	1,823	2,472	2,628	2,794	2,970	3,157	3,242
Deferred Income Tax	322	-20	-700	-134	-143	-152	-161	-171	-176
Tax Allowance/Credit	—	—	—	—	—	—	—	—	—
Income (Loss) from Cont Ops	9,119	6,975	7,228	8,674	9,221	9,802	10,419	11,076	11,375
Net Extraordinary Losses (Gains)	-48	-11	-18	-29	-31	-32	-34	-37	-38
Discontinued Operations	-48	-11	-18	-29	-31	-32	-34	-37	-38
XO & Accounting Changes	—	—	—	—	—	—	—	—	—
Income (Loss) Incl. MI	9,167	6,986	7,246	8,703	9,251	9,834	10,454	11,112	11,412
Minority Interest	32	26	31	33	35	37	40	42	43
Net Income, GAAP	9,135	6,960	7,215	8,670	9,216	9,797	10,414	11,070	11,369
Preferred Dividends	2	2	2	2	2	3	3	3	3
Other Adjustments	—	—	—	—	—	—	—	—	—
Net Income Avail to Common, GAAP	9,133	6,958	7,213	8,668	9,214	9,794	10,412	11,067	11,366

Appendix C: Cash Flow Statement, in thousands.

	2014	2015	2016	2017F	2018F	2019F	2020F	2021F	Perpetuity
Cash from Operating Activities									
Net Income	9,135	6,960	7,215	8,670	9,216	9,797	10,414	11,070	11,369
Depreciation & Amortization	5,537	5,157	5,757	6,105	6,490	6,899	7,333	7,795	8,006
Non-Cash Items	1,151	2,724	2,561	2,385	2,536	2,695	2,865	3,046	3,128
Stock-Based Compensation	586	669	691	722	768	816	868	922	947
Deferred Income Taxes	317	-18	-700	-135	-144	-153	-163	-173	-177
Other Non-Cash Adj	248	2,073	2,570	1,798	1,912	2,032	2,160	2,296	2,358
Chg in Non-Cash Work Cap	1,111	-159	368	489	519	552	587	624	641
(Inc) Dec in Accts Receiv	148	21	-134	16	17	19	20	21	22
(Inc) Dec in Inventories	175	-199	365	119	127	135	143	152	156
Inc (Dec) in Accts Payable	297	254	871	518	551	585	622	661	679
Inc (Dec) in Other	491	-235	-734	-165	-175	-186	-198	-210	-216
Net Cash From Disc Ops	-51	6	0	-17	-18	-19	-20	-22	-22
Cash from Operating Activities	16,883	14,688	15,901	17,632	18,743	19,924	21,179	22,514	23,121
Cash from Investing Activities									
Change in Fixed & Intang	-1,199	-1,496	-1,999	-1,734	-1,843	-1,959	-2,083	-2,214	-2,274
Disp in Fixed & Intang	—	—	—	—	—	—	—	—	—
Disp of Fixed Prod Assets	—	—	—	—	—	—	—	—	—
Disp of Intangible Assets	—	—	—	—	—	—	—	—	—
Acq of Fixed & Intang	-1,199	-1,496	-1,999	-1,734	-1,843	-1,959	-2,083	-2,214	-2,274
Acq of Fixed Prod Assets	-1,199	-1,397	-1,823	-1,634	-1,737	-1,846	-1,962	-2,086	-2,142
Acq of Intangible Assets	0	-99	-176	-100	-107	-113	-120	-128	-132
Net Change in LT Investment	-4,573	-2,613	3,243	-1,578	-1,677	-1,783	-1,895	-2,014	-2,069
Dec in LT Investment	6,145	6,929	11,254	8,961	9,526	10,126	10,764	11,442	11,751
Inc in LT Investment	-10,718	-9,542	-8,011	-10,539	-11,203	-11,908	-12,659	-13,456	-13,820
Net Cash From Acq & Div	-579	-16,466	-18,368	-13,036	-13,857	-14,730	-15,658	-16,645	-17,094
Cash from Divestitures	0	0	0	0	0	0	0	0	0
Cash for Acq of Subs	-579	-16,466	-18,368	-13,036	-13,857	-14,730	-15,658	-16,645	-17,094
Cash for JVs	0	0	0	0	0	0	0	0	0
Other Investing Activities	697	17,595	9,313	10,304	10,954	11,644	12,377	13,157	13,512
Cash from Investing Activities	-5,654	-2,980	-7,811	-6,043	-6,424	-6,828	-7,258	-7,716	-7,924
Cash from Financing Activities									
Dividends Paid	-6,609	-6,940	-7,317	-7,745	-8,233	-8,752	-9,304	-9,890	-10,157
Cash From (Repayment) Debt	549	1,319	2,573	1,624	1,727	1,835	1,951	2,074	2,130
Cash From (Repay) ST Debt	-1,838	4,309	-714	704	749	796	846	899	924
Cash From LT Debt	4,491	0	10,976	5,584	5,936	6,309	6,707	7,129	7,322
Repayments of LT Debt	-2,104	-2,990	-7,689	-4,664	-4,958	-5,270	-5,602	-5,955	-6,116
Cash (Repurchase) of Equity	-3,998	-4,897	-3,981	-4,795	-5,098	-5,419	-5,760	-6,123	-6,288
Increase in Capital Stock	1,002	1,263	1,019	1,223	1,300	1,382	1,469	1,562	1,604
Decrease in Capital Stock	-5,000	-6,160	-5,000	-6,019	-6,398	-6,801	-7,229	-7,685	-7,892
Other Financing Activities	72	109	-196	-1	-1	-1	-1	-1	-1
Cash from Financing Activities	-9,986	-10,409	-8,921	-10,917	-11,605	-12,336	-13,113	-13,939	-14,316
Effect of Foreign Exchange Rates	-83	-1,000	-215	-491	-522	-554	-589	-626	-643
Net Changes in Cash	1,160	299	-1,046	182	193	205	218	232	238
Cash Paid for Taxes	2,100	2,383	2,521	2,599	2,762	2,936	3,121	3,318	3,408
Cash Paid for Interest	1,550	1,302	1,451	1,598	1,699	1,806	1,919	2,040	2,095

Appendix D: Common-Size Statement of Financial Position

	2014	2015	2016	2017F
Total Assets				
Cash, Cash Equivalents & STI	21.56%	13.91%	10.40%	15.35%
Cash & Cash Equivalents	2.00%	2.18%	1.51%	1.90%
ST Investments	19.56%	11.74%	8.89%	13.45%
Accounts & Notes Receiv	5.01%	4.88%	4.79%	4.90%
Accounts Receivable, Net	5.01%	4.88%	4.79%	4.90%
Notes Receivable, Net	—	—	—	—
Inventories	3.38%	4.49%	3.95%	3.94%
Raw Materials	0.30%	0.52%	0.46%	0.43%
Work In Process	1.94%	2.35%	2.15%	2.15%
Finished Goods	1.14%	1.62%	1.34%	1.37%
Other Inventory	0.00%	0.00%	0.00%	0.00%
Other ST Assets	3.23%	2.88%	3.55%	3.21%
Derivative & Hedging Assets	0.63%	0.35%	0.33%	0.44%
Assets Held-for-Sale	—	0.01%	0.47%	0.00%
Deferred Tax Assets	1.53%	1.59%	1.77%	1.63%
Taxes Receivable	—	—	—	—
Discontinued Operations	—	—	—	—
Misc ST Assets	1.06%	0.94%	0.98%	0.99%
Total Current Assets	33.18%	26.17%	22.70%	27.40%
Property, Plant & Equip, Net	7.02%	8.22%	7.76%	7.67%
Property, Plant & Equip	14.91%	16.29%	16.39%	15.86%
Accumulated Depreciation	7.89%	8.07%	8.63%	8.19%
LT Investments & Receivables	10.45%	9.56%	4.15%	8.11%
LT Investments	10.45%	9.56%	4.15%	8.11%
Other LT Assets	49.35%	56.05%	65.40%	56.82%
Total Intangible Assets	46.09%	52.93%	62.41%	53.70%
Goodwill	25.11%	28.82%	31.73%	28.51%
Other Intangible Assets	20.99%	24.11%	30.68%	25.18%
Deferred Tax Assets	1.16%	1.07%	1.06%	1.10%
Derivative & Hedging Assets	0.53%	0.56%	0.40%	0.50%
Prepaid Pension Costs	—	0.34%	0.17%	0.00%
Misc LT Assets	1.57%	1.14%	1.36%	1.35%
Total Noncurrent Assets	66.82%	73.83%	77.30%	72.60%
Total Assets	100.00%	100.00%	100.00%	100.00%
Liabilities & Shareholders' Equity				
Payables & Accruals	4.35%	4.93%	5.48%	4.91%
Accounts Payable	1.92%	2.16%	2.64%	2.23%
Accrued Taxes	0.32%	0.25%	0.25%	0.27%
Interest & Dividends Payable	1.02%	1.11%	1.13%	1.09%
Other Payables & Accruals	1.10%	1.41%	1.45%	1.32%
ST Debt	3.07%	6.07%	6.23%	5.11%
ST Borrowings	1.27%	3.85%	3.77%	2.96%
ST Capital Leases	0.00%	0.00%	0.00%	0.00%
Current Portion of LT Debt	1.80%	2.22%	2.46%	2.16%
Other ST Liabilities	5.46%	6.57%	6.42%	6.15%
Deferred Revenue	0.00%	0.00%	0.00%	0.00%
Derivatives & Hedging	0.05%	0.39%	0.73%	0.38%
Discontinued Operations	—	—	—	—
Misc ST Liabilities	5.41%	6.18%	5.70%	5.76%
Total Current Liabilities	12.88%	17.56%	18.13%	16.17%
LT Debt	18.82%	17.17%	18.30%	18.09%
LT Borrowings	18.82%	17.17%	18.30%	18.09%
LT Capital Leases	0.00%	0.00%	0.00%	0.00%
Other LT Liabilities	25.55%	26.43%	28.70%	26.87%
Accrued Liabilities	0.00%	0.00%	0.00%	0.00%
Pension Liabilities	6.13%	4.85%	4.76%	5.25%
Deferred Revenue	0.00%	0.00%	0.00%	0.00%
Deferred Tax Liabilities	13.92%	16.06%	17.92%	15.94%
Derivatives & Hedging	0.36%	0.63%	0.26%	0.42%
Misc LT Liabilities	5.16%	4.89%	5.76%	5.26%
Total Noncurrent Liabilities	44.38%	43.60%	47.00%	44.96%
Total Liabilities	57.26%	61.17%	65.13%	61.13%
Preferred Equity and Hybrid Capital	0.02%	0.02%	0.01%	0.02%
Share Capital & APIC	47.40%	48.68%	48.45%	48.18%
Common Stock	0.27%	0.27%	0.27%	0.27%
Additional Paid in Capital	47.13%	48.40%	48.18%	47.90%
Treasury Stock	43.58%	47.35%	49.16%	46.67%
Retained Earnings	43.07%	43.01%	41.82%	42.65%
Other Equity	-4.37%	-5.69%	-6.43%	-5.48%
Equity Before Minority Interest	42.55%	38.67%	34.70%	38.69%
Minority/Non Controlling Interest	0.19%	0.17%	0.17%	0.18%
Total Equity	42.74%	38.83%	34.87%	38.87%
Total Liabilities & Equity	100.00%	100.00%	100.00%	100.00%

Appendix E: Common-Size Income Statement

	2014	2015	2016	2017F
Revenue	100.00%	100.00%	100.00%	100.00%
Sales & Services Revenue	100.00%	100.00%	100.00%	100.00%
Cost of Revenue	19.31%	19.75%	23.34%	20.80%
Cost of Goods & Services	19.31%	19.75%	23.34%	20.80%
Gross Profit	80.69%	80.25%	76.66%	79.20%
Other Operating Income	—	—	—	—
Operating Expenses	53.98%	56.05%	53.93%	54.65%
Selling, General & Admin	28.42%	30.31%	28.09%	28.94%
Research & Development	16.92%	15.74%	14.90%	15.85%
Depreciation & Amortization	8.14%	7.63%	—	5.26%
Other Operating Expense	0.50%	2.36%	10.94%	4.60%
Operating Income (Loss)	26.71%	24.20%	22.73%	24.55%
Non-Operating (Income) Loss	2.03%	5.85%	6.92%	4.94%
Interest Expense, Net	1.88%	1.49%	1.36%	1.58%
Interest Expense	2.74%	2.45%	2.25%	2.48%
Interest Income	0.86%	0.96%	0.89%	0.90%
Foreign Exch (Gain) Loss	0.00%	1.65%	0.00%	0.55%
(Income) Loss from Affiliates	—	—	—	—
Other Non-Op (Income) Loss	0.15%	2.71%	5.56%	2.81%
Pretax Income	24.67%	18.35%	15.81%	19.61%
Income Tax Expense (Benefit)	6.29%	4.07%	2.13%	4.16%
Current Income Tax	5.64%	4.11%	3.45%	4.40%
Deferred Income Tax	0.65%	-0.04%	-1.33%	-0.24%
Tax Allowance/Credit	—	—	—	—
Income (Loss) from Cont Ops	18.38%	14.28%	13.68%	15.45%
Net Extraordinary Losses (Gains)	-0.10%	-0.02%	-0.03%	-0.05%
Discontinued Operations	-0.10%	-0.02%	-0.03%	-0.05%
XO & Accounting Changes	—	—	—	—
Income (Loss) Incl. MI	18.48%	14.30%	13.72%	15.50%
Minority Interest	0.06%	0.05%	0.06%	0.06%
Net Income, GAAP	18.42%	14.25%	13.66%	15.44%
Preferred Dividends	0.00%	0.00%	0.00%	0.00%
Other Adjustments	—	—	—	—
Net Income Avail to Common, GAAP	18.41%	14.24%	13.65%	15.44%

Appendix F: Key Financial Ratios

	2014	2015	2016	2017F
Liquidity Ratios				
Current Ratio (x)	2.58	1.49	1.25	1.69
Quick Ratio (x)	2.06	1.07	0.84	1.25
Cash Ratio (x)	1.67	0.79	0.57	0.95
Solvency Ratios				
Long term debt ratio (%)	44%	44%	52%	47%
Long and short term debt ratio (%)	51%	60%	70%	60%
Interest Coverage (x)	9.74	9.86	10.12	9.9
Debt to Equity (x)	1.34	1.58	1.87	1.57
Equity Ratio (%)	43%	39%	35%	39%
Equity Multiplier (x)	2.34	2.58	2.87	2.57
Profitability Ratios				
Gross Margin (%)	80.69%	80.25%	76.66%	79.20%
EBIT Margin (%)	26.71%	24.20%	22.73%	24.55%
EBITDA Margin (%)	37.87%	34.76%	33.63%	34.31%
Net Profit Margin (%)	18.42%	14.25%	13.66%	15.44%
ROA (%)	5.45%	4.16%	4.20%	4.61
ROE (%)	12.75%	10.71%	12.05%	11.86%
EPS (x)	1.44	1.13	1.18	1.39
Efficiency Ratios				
Total Assets Turnover (x)	0.3	0.29	0.31	0.3
Accounts receivable turnover (x)	5.9	5.97	6.42	6.09
Accounts paybale turnover (x)	2.82	3.37	2.84	2.82
Inventory turnover (x)	1.62	1.46	1.72	1.64

Appendix G: Forecasting Assumptions

P&L	Assumptions						Description
	2017F	2018F	2019F	2020F	2021F	Perp.	
Revenues							Sum of IH and EH segment revenues
Cost of Revenue	21%	21%	21%	21%	21%	21%	Percentage of Revenues
Operating Expenses	55%	55%	55%	55%	55%	55%	Percentage of Revenues
Selling, General Admin. Expenses	53%	53%	53%	53%	53%	53%	Percentage of Operating Expenses
R&D Expenses	29%	29%	29%	29%	29%	29%	Percentage of Operating Expenses
D&A	10%	10%	10%	10%	10%	10%	Percentage of Operating Expenses
Other Operating Expenses	8%	8%	8%	8%	8%	8%	Percentage of Operating Expenses
Non-Operating Income	5%	5%	5%	5%	5%	5%	Percentage of Revenues
Interest Expense	50%	50%	50%	50%	50%	50%	Percentage of Non-Operating Expenses
Interest Income	18%	18%	18%	18%	18%	18%	Percentage of Non-Operating Expenses
Foreign Exchange Gain	11%	11%	11%	11%	11%	11%	Percentage of Non-Operating Expenses
Income from afiliates							Equal to 2016 nominal Value
Other Non Operational Income	3%	3%	3%	3%	3%	3%	Percentage of Revenues
Income Tax Expense	20%	20%	20%	20%	20%	20%	Average of last 3 years and forecasted value
Net Extraordinary Losses	-0,1%	-0,1%	-0,1%	-0,1%	-0,1%	-0,1%	Percentage of Revenues

Balance Sheet	Assumptions						Description
	2017F	2018F	2019F	2020F	2021F	Perp.	
Current Assets	27%	27%	27%	27%	27%	27%	Percentage of Total Assets
Cash and Cash Equivalents	7%	7%	7%	7%	7%	7%	Percentage of Current Assets
Shor-term investments	49%	49%	49%	49%	49%	49%	Percentage of Current Assets
Trade Accounts receivable	18%	18%	18%	18%	18%	18%	Percentage of Current Assets
Inventories	14%	14%	14%	14%	14%	14%	Percentage of Current Assets
Other Assets	12%	12%	12%	12%	12%	12%	Percentage of Current Assets
Assets held for sale							Equal to 2016 nominal value
Non Current Assets	73%	73%	73%	73%	73%	73%	Percentage of Total Assets
Long-term investments	11%	11%	11%	11%	11%	11%	Percentage of Non Current Assets
Property, Plant and Equipment	11%	11%	11%	11%	11%	11%	Percentage of Non Current Assets
Identifiable intangible assets	78%	78%	78%	78%	78%	74%	Percentage of Non Current Assets
Total Assets	335%	335%	335%	335%	335%	335%	Percentage of Revenues
Current Liabilities	26%	26%	26%	26%	26%	26%	Percentage of Total Liabilities
Short-term borrowings	32%	32%	32%	32%	32%	32%	Percentage of Current Liabilities
Trade accounts payable	30%	30%	30%	30%	30%	30%	Percentage of Current Liabilities
Other Short-term liabilities	38%	38%	38%	38%	38%	38%	Percentage of Current Liabilities
Non Current Liabilities	74%	74%	74%	74%	74%	74%	Percentage of Total Liabilities
Long-term debt	40%	40%	40%	40%	40%	40%	Percentage of Non Current Liabilitie
Other Long-term debt	60%	60%	60%	60%	60%	60%	Percentage of Non Current Liabilitie
Total Liabilities	205%	205%	205%	205%	205%	205%	Percentage of Revenues
Prefered Equity and Hybrid Capital	0,04%	0,04%	0,04%	0,04%	0,04%	0,04%	Percentage of Equity
Share Capital	124%	124%	124%	124%	124%	124%	Percentage of Equity
Treasury Stock	120%	120%	120%	120%	120%	120%	Percentage of Equity
Retained Earnings	110%	110%	110%	110%	110%	110%	Percentage of Equity
Other Equity	-14%	-14%	-14%	-14%	-14%	-14%	Percentage of Equity
Minority interest	0,5%	0,5%	0,5%	0,5%	0,5%	0,5%	Percentage of Equity
Total Equity	130%	130%	130%	130%	130%	130%	Percentage of Revenues

Appendix H: DCF Valuation

The target stock price of Pfizer Inc. was forecasted using the **Discounted Cash Flow Method (DCF)** as the main model. Moreover, we also applied the **Relative Valuation Method** to compare results and support the price target results.

Discounted Cash Flow is used to compute the fair market value of a business, discounting the free cash flow to the firm (FCFF) and providing an accurate estimation of a company's future level of borrowing during the forecasted period. FCFF is the cash available to satisfy investors that currently hold claims related to the company resources, namely stockholders, lenders and preferred stockholders. FCFF can be computed according to the following expression:

$$\boldsymbol{FCFF = EBIT * (1 - Tax\ Rate) + D\&A - CapEx - \Delta NWC}$$

Considering this definition of FCFF, only cash flows from operating activities are considered. The Tax Rate considered can be the Effective Tax Rate for the company, and NWC stands for Net Working Capital.

	2014	2015	2016	2017F	2018F	2019F	2020F	2021F	Perpetuity
Revenues	49,605	48,851	52,824	56,152	59,689	63,450	67,447	71,696	73,632
Cost of Goods Sold	9,577	9,648	12,329	11,679	12,415	13,197	14,028	14,912	15,315
Operating Expenses	26,779	27,379	28,489	30,689	32,623	34,678	36,863	39,185	40,243
Operating Income or Losses (EBIT)	**13,249**	**11,824**	**12,006**	**13,784**	**14,652**	**15,575**	**16,556**	**17,599**	**18,075**
Depreciation & Amortization	5,537	5,157	5,757	5,484	5,466	5,569	5,506	5,514	5,530
EBITDA	**18,786**	**16,981**	**17,763**	**19,267**	**20,118**	**21,144**	**22,063**	**23,113**	**23,604**
Effective Tax Rate	0	0	0	0	0	0	0	0	0
Average Effective Tax Rate	0	0	0	0	0	0	0	0	0
Interest Expense	1,360	1,199	1,186	1,393	1,481	1,574	1,673	1,778	1,826
Depreciation & Amortization	5,537	5,157	5,757	5,484	5,466	5,569	5,506	5,514	5,530
CapEx	-1,199	-1,397	-1,823	-1,473	-1,564	-1,620	-1,552	-1,579	-1,584
Changes in Working Capital	1,111	-159	368	489	519	552	587	624	641
Net Cash from discontinued operations	-51	6	0	-17	-18	-19	-20	-22	-22
Other operating adjustments	1,151	2,724	2,561	1,798	1,912	2,032	2,160	2,296	2,358
Net income	9,135	6,960	7,215	8,670	9,216	9,797	10,414	11,070	11,369
FCF	**15,684**	**13,291**	**14,078**	**14,951**	**15,531**	**16,311**	**17,095**	**17,904**	**18,292**
Interest Expense	1,360	1,199	1,186	1,393	1,481	1,574	1,673	1,778	1,826
Effective Tax Rate	1,013	933	1,027	1,109	1,179	1,253	1,332	1,416	1,454
FCFF	**16,697**	**14,224**	**15,105**	**16,060**	**16,710**	**17,564**	**18,427**	**19,320**	**19,746**

The discount rate used to discount the FCFF is the **Weighted Average Cost of Capital (WACC),** which represents basically the company's cost of fund and the return investors require to buy common and preferred stock and bonds of the company. WACC is determined using the next formula, disregarding the presence of preferred stock:

$$\boldsymbol{WACC = K_e * \frac{E}{E+D} + K_d * \frac{D}{E+D} * (1-t)}$$

In which, **Cost of Equity (Ke)** stands for the minimum rate of return required to induce investors to buy the company's equity. The cost of equity is usually estimated and computed using the Capital Asset Pricing Model (CAPM), balancing expected return and risk. In this work, we used the following expression do determine cost of equity:

$$\mathbf{K_e = R_f + \beta_l * ERP + \alpha}$$

The **Risk-Free Rate (Rf)** is the return for an investor who usually invest in riskless assets, consequently the more riskless investment is considered to be the U.S. Treasury Bond, which was used in our computations.

The **Levered Beta** was computed using the **Unlevered Beta** for this industry by Aswath Damodaran, and the actual level of debt the company currently has. Also the **Equity Risk Premium** was extracted from Aswath Damodaran website. The **Alpha** term considered represents a penalization on our cost of equity, regarding the company operations worldwide that account for an extra risk factor that should be accounted for since not all operations are U.S. based (see e.g., Godfrey and Espinosa 1996).

Cost of Debt (Kd), is the cost the company faces when financing itself with borrowed funds. In our analysis and valuation procedures, we considered that the cost of debt would be the average yield of already issued bonds of the company, which should reflect its rating grade.

	2014	2015	2016	2017F	2018F	2019F	2020F	2021F	Perpetuity
Risk Free Rate	2.17%	2.17%	2.17%	2.17%	2.17%	2.17%	2.17%	2.17%	2.17%
Cost of Debt (Kd)	**2.46%**	**2.46%**	**2.46%**	**2.46%**	**2.46%**	**2.46%**	**2.46%**	**2.46%**	**2.46%**
Equity Risk Premium	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Unlevered Beta for industry	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Levered Beta for industry	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Cost of Equity (Ke)	**10.45%**	**10.45%**	**10.45%**	**10.45%**	**10.45%**	**10.45%**	**10.45%**	**10.45%**	**10.45%**
Weight of Debt	15.7%	15.3%	16.0%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%
Weight of Equity	84.3%	84.7%	84.0%	84.3%	84.3%	84.3%	84.3%	84.3%	84.3%

Following the briefly discussed assumptions, the results suggest the following price target:

DCF Summed	67,757
Terminal Value	169,730
Perpetual Growth	2.25%
Perpetual WACC	9.12%
Market Value	237,487
Net Debt	14,780
Equity Value	222,707
Shares Outsanding	5,962
Price at 31/12/2016	32.48
Price Target	37.35
Upside Potential	15%

Appendix I: Relative Valuation

The first step for choosing the peer group consisted in consulting **Thomson Reuters** platform to extract possible comparable companies in this industry, with headquarters in the United States. The following table provides the information about the companies that satisfy this criterion:

Company Name	Headquarters
Brystol-Myers Squibb (BMY)	U.S.
Eli Lilly (LLY)	U.S.
Allergan (AGN)	U.S.
AstraZeneca (AZN)	U.S.
Novo Nordisk (NVO)	U.S.
Johnson & Johnson (JNJ)	U.S.
Novartis (NVS)	U.S.
GlaxoSmithKline (GSK)	U.S.
Merck (MRK)	U.S.
Sanofi (SNY)	U.S.

The second step, was to compare companies in terms of size by analyzing sales, market capitalization, total assets, net income and EBITDA. We considered that the best comparable companies would be those that fulfilled at least three of the parameters selected.

In terms of Sales, Pfizer Inc. recorded in 2016 $52,824 M, and according to our analysis only four companies are considered comparable to PFE (identified in green in the next table).

Company Name	Sales
Brystol-Myers Squibb (BMY)	19,427
Eli Lilly (LLY)	21,222
Allergan (AGN)	14,571
AstraZeneca (AZN)	23,002
Novo Nordisk (NVO)	111,780
Johnson & Johnson (JNJ)	71,890
Novartis (NVS)	48,518
GlaxoSmithKline (GSK)	27,889
Merck (MRK)	39,807
Sanofi (SNY)	34,708

In what concerns to market capitalization, Pfizer Inc. has approximately $197,154 M. The following table provides peers that obey to this criterion (identified in green).

Company Name	Market Capitalization
Brystol-Myers Squibb (BMY)	97,244
Eli Lilly (LLY)	80,969
Allergan (AGN)	70,332
AstraZeneca (AZN)	69,311
Novo Nordisk (NVO)	636,848
Johnson & Johnson (JNJ)	311,817
Novartis (NVS)	172,943
GlaxoSmithKline (GSK)	76,696
Merck (MRK)	161,818
Sanofi (SNY)	97,096

Regarding total assets, Pfizer Inc. has a total value of $171,615 M, and comparing with similar companies of the industry the output after applying the criterion is the following (in green):

Company Name	Total Assets
Brystol-Myers Squibb (BMY)	33,707
Eli Lilly (LLY)	38,806
Allergan (AGN)	128,986
AstraZeneca (AZN)	62,256
Novo Nordisk (NVO)	97,539
Johnson & Johnson (JNJ)	141,208
Novartis (NVS)	130,124
GlaxoSmithKline (GSK)	59,081
Merck (MRK)	95,377
Sanofi (SNY)	104,672

For Net Income, Pfizer Inc. registered a value of 7,215 and the performance of the peers is demonstrated below with the corresponding elimination criterion:

Company Name	Net Income
Brystol-Myers Squibb (BMY)	4,457
Eli Lilly (LLY)	2,738
Allergan (AGN)	14,973
AstraZeneca (AZN)	3,499
Novo Nordisk (NVO)	37,925
Johnson & Johnson (JNJ)	16,540
Novartis (NVS)	6,712
GlaxoSmithKline (GSK)	912
Merck (MRK)	3,920
Sanofi (SNY)	4,709

The last elimination criterion used in order to select the four best comparable companies, was EBITDA. In terms of EBITDA Pfizer Inc. performed $17,763 M in 2016, while the others are shown below:

Company Name	EBITDA
Brystol-Myers Squibb (BMY)	5,012
Eli Lilly (LLY)	4,955
Allergan (AGN)	7,210
AstraZeneca (AZN)	7,475
Novo Nordisk (NVO)	51,625
Johnson & Johnson (JNJ)	24,890
Novartis (NVS)	13,618
GlaxoSmithKline (GSK)	4,425
Merck (MRK)	10,820
Sanofi (SNY)	9,835

After all criteria applied to our peer group, the best four comparable companies are Johnson & Johnson, Novartis, Merck and Sanofi. The table below summarizes all criteria:

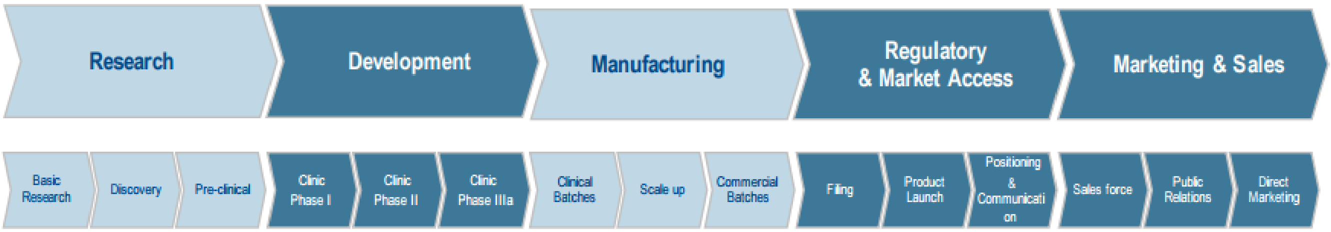
Company Name	Sales	Market Cap.	Total Assets	Net Income	EBITDA	Peer
BMY	NO	NO	NO	YES	NO	NO
LLY	NO	NO	NO	NO	NO	NO
AGN	NO	NO	YES	NO	NO	NO
AZN	NO	NO	NO	YES	NO	NO
NVO	NO	NO	YES	NO	NO	NO
JNJ	YES	NO	YES	NO	YES	YES
NVS	YES	YES	YES	YES	YES	YES
GSK	NO	NO	NO	NO	NO	NO
MRK	YES	YES	YES	YES	YES	YES
SNY	YES	NO	YES	YES	YES	YES

Thenceforward, all computations about relative valuation were done using those four companies as a comparable (peers), and using the multiples Enterprise Value to EBITDA (EV/EBITDA), Enterprise Value to EBIT (EV/EBIT), Enterprise Value to Sales (EV/Sales), Price to Book Value (P/B), Price to Sales (Price/Sales) and Price to Earnings (P/E).

Following table summarize all multiple results and the respective price target derived from those computations.

Multiples Resume	Price Target
EV/EBITDA	$38,35
EV/EBIT	$37,74
EV/Sales	$34,40
P/Sales	$35,52
P/B	$37,26
P/E	$41,70
Average Price Target	$37,66

Appendix J: Industry Value Chain



Appendix K: Net Debt Forecast

	2014	2015	2016	2017F	2018F	2019F	2020F	2021F	Perpetuity
Net Debt	560	15,609	24,236	14,780	15,711	16,700	17,753	18,871	19,380
Short-term Debt	5,141	10,159	10,688	9,619	10,225	10,870	11,554	12,282	12,614
Long-term Debt	31,541	28,740	31,398	34,038	36,183	38,462	40,885	43,461	44,635
Total	36,682	38,899	42,086	43,658	46,408	49,332	52,440	55,744	57,249
Cash and Cash Equivalents	3,343	3,641	2,595	3,576	3,801	4,041	4,295	4,566	4,689
Short-term investments	32,779	19,649	15,255	25,302	26,896	28,591	30,392	32,307	33,179
Total	36,122	23,290	17,850	28,878	30,698	32,632	34,687	36,873	37,868

Appendix L: Changes in Working Capital

	2014	2015	2016	2017F	2018F	2019F	2020F	2021F	Perpetuity
Changes in Accounts Receivable	148	21	-134	16	17	19	20	21	22
Changes in Inventories	175	-199	365	119	127	135	143	152	156
Changes in Accounts Payable	297	254	871	518	551	585	622	661	679
Increase or Decrease in Other Operatins Assets or Liabilities	491	-235	-734	-165	-175	-186	-198	-210	-216

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